DIGITAL ENTREPRENEURSHIP

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29th - 30th January, 2021
(Friday & Saturday)

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Message from the President, SMES

Heartiest Congratulations to the Maharaja Surajmal Institute for organizing the National Conference on **"Digital Entrepreneurship" sponsored by Guru Gobind Singh Indraprastha University.** I appreciate the organizing team for showing a keen interest in organizing the Conference and contributing new ideas and research findings.

We live in a digital era. With an abundance of digitization going on all around, it is high time that both the organizations as well as end users adapt the digital transformation as soon as possible. We are living in a phase in which all businesses–whether small-scale or big-scale, need to make use of the innovative digital platform for gaining maximum success. This is the reason why modern business owners are looking forward to becoming successful digital entrepreneurs. With the overall trend of “Digital World” going on all around, the business enterprises are quickly adopting the digital revolution to remain competitive in the modern era. Digital transformation is radically altering the way businesses function and organize production. This transformation is driven by the advance of new digital technologies such as the Internet of Things, Block chain, Artificial Intelligence, Big Data, Cloud Computing, Next-generation Wireless Networks and more. Each of these is enabled by dramatic increases in computing power and a simultaneous decline in its cost.

In terms of *education,* digital entrepreneurship opens new possibilities to train the next generation of entrepreneurs. The best way to learn entrepreneurship is to 'do it' and reflect on that experience. Perhaps one day, most entrepreneurial ventures will be 'born digital,' and digital entrepreneurship will cease to exist as a separate topic. Today, however, there is a real need to prepare entrepreneurs for the digital world better and give more people a new path to entrepreneurship.

I appreciate the support of our sponsor, Guru Gobind Singh Indraprastha University (**GGSIPU**). I would also like to express my appreciation to all the resource persons for their valuable contribution in assembling the high-quality conference program. A conference of this size relies on many volunteers and I would like to acknowledge every member's efforts in making the Conference a grand success. I am also grateful to all the authors who trusted the Conference with their work.

My best wishes to all of you for your endeavors to spread knowledge,

With warm regards,

Sh. Kaptan Singh
President, Surajmal Memorial Education Society

Message from the Secretary, SMES

Congratulations to the entire team involved in the organization of Two Days GGSIPU Sponsored National Conference on 'Digital Entrepreneurship' on 29th & 30th January, 2021. Such platform brings together educators, academic leaders, and researchers to share ideas and contribute researches in these evolving management and technological skills.

Digital entrepreneurship is a new concept brought in with conglomeration of digital world with entrepreneurship. We need to see how it will change the business and the society as a whole. There will altogether be new ways of finding customers for entrepreneurship ventures, designing, and offering products, and services. And also at the same time finding new ways of generating revenue, and reducing cost. It will bring about new opportunity, risk, and competitive advantage.

It will offer new theories beyond learning new practical skills which can be used to run the business all digital way. It opens up the plethora of questions about the opportunity, risk, strategy, competition, and profit. Starting a new business or launching a new product, in the normal world is costly and risky for beginners. The digital world not just lowers the barriers for starting new ventures but, in turn offers a variety of pathways to success. It's just a different world paving way for educationist to adapt to new pedagogy from case studies, simulations, and business plans.

Digital entrepreneurship opens up new possibilities for young generation thinking of becoming an entrepreneur and goes very much with the ongoing vision of our Country – Make in India, Make for India & Digital India. At the end I would like to appreciate the sponsor of the Conference Guru Gobind Singh Indraprastha University for encouraging such academic activities.

I would also like to express my appreciation to the all the resource persons for their valuable contribution in assembling the high-quality conference program. A conference of this size relies on the contributions of many volunteers, and I would like to acknowledge the efforts of every member in making the conference a grand success. I convey my best wishes to all the authors who trusted the conference with their work.

I would like to conclude with a quote:

"Educate and raise the masses, and thus alone a nation is possible."

-Swami Vivekanand.

With warm regards,

Ajit Singh Chaudhary
Secretary, Surajmal Memorial Education Society

Foreward

"A lot of people have ideas, but there are few who decide to do something about them now. Not tomorrow. Not next week. But today, the true entrepreneur is a doer, not a dreamer."

– Nolan Bushnell

In recent years, digital technology has taken over our lives. There has been a considerable shift in mindset. People reflect on the way they work and live and look for alternatives that offer them a better work-life balance. Many want to earn a full-time salary without the daily time-consuming commute and 9-5 schedule for a more flexible and self-determined way of life. Naturally, the digital environment is where increasingly more people turn to for income and work opportunities, especially since many more traditional industries have been hit hard by the Corona virus pandemic. Digital entrepreneurship grows as internet access increases. Digital entrepreneurship includes all business activities that use the digital platform. Does that make Uber or Airbnb an example of digital entrepreneurship, or should it be confined to those who do not offer any physical products or services? Digital entrepreneurs, with their new ways of doing business, had an enormous effect on the whole world, especially in the last decade. Google, Facebook, Microsoft, and Apple completely changed the business world and shaped the way we communicate with each other in everyday life. As the digitalization phenomenon causes various implications through rapid and transformative change, it is relevant for entrepreneurs and entrepreneurship researchers to be aware of related outcomes and connections and identify emerging business opportunities. Digital entrepreneurship highlights changes in entrepreneurial practice, theory, and education. It embraces all new ventures and the transformation of existing businesses that drive economic and social value by creating and using novel digital technologies. Digital enterprises are characterized by a high intensity of utilization of novel digital technologies (mainly social media, big data, mobile, and cloud solutions) to improve business operations, invent new business models, sharpen business intelligence, and engage with customers and stakeholders. They create the jobs and growth opportunities of the future.

This National Conference being organised by Maharaja Surajmal Institute, sponsored by **Guru Gobind Singh Indraprastha University**, is aimed to provide a platform for educators, administrators, managers, leaders, policymakers, researchers, scholars, principals, supervisors, graduate students, practitioners, academicians, professionals, and teachers from different disciplinary backgrounds to present and discuss research, developments, and innovations in the fields of digital entrepreneurship.

My sincere thanks to our management for their constant support and encouragement. I congratulate the organizers, faculty members, and all the participants for their enthusiastic support and participation in the National Conference.

I wish the Conference great success.

Prof. (Dr.) RachitaRana
Director, Maharaja Surajmal Institute

Preface

We are in the era of the digital age with efficient communication practice. Digital entrepreneurship is broadly defined as creating new ventures and transforming existing businesses by developing novel digital technologies (social media, big data, and mobile and cloud solutions) and/or novel usage of such technologies. Digital entrepreneurship has been viewed as a critical pillar for economic growth & job creation. A nation's digital entrepreneurial capacity depends largely on digital entrepreneurial behavior, culture, and strategies as well as a supportive innovation ecosystem in which governments, industry, business, educational institutions and NGOs work together. The rapid proliferation of digital technologies with new functionalities has profoundly changed competitive environments, reshaping traditional business strategies, structures and processes.

Maharaja Surajmal Institute has been established with a deep concern with the standards of education and a determination to upgrade the quality, content, and direction of education. Maharaja Surajmal Institute is a well-known institute in the field of professional and technical education. In last two decades we organized various conferences and seminars to make a bridge between academia and industry successfully. This particular conference titled "Digital Entrepreneurship" has the major goal to provide a platform for sharing the latest research and development in this area among students, academia and industry. We received an overwhelming response from every section of the researcher viz. academia, industry and students. Paper received for the conference contains an enlarge scope of work. The program consisted of plenary sessions which include sub themes like Entrepreneurship Development, Human Resource and Organisational Behaviour in Digital Enterprises, Marketing in Digital Enterprises, Financial System and Accounting: Practices for Digital Enterprises, Information and Communication Technology etc.

This proceeding is comprised of written contributions of various authors nationwide during the conference (29^{th} - 30^{th}, January, 2021); we are thankful to all the participants from deep of our heart. We also want to thank the review board for their careful reading of all manuscript of this proceeding and their many insightful comments and suggestions.

We are thankful to GGSIPU for providing sponsorship to conduct the national conference. We express our heartfelt thanks to Prof. (Dr.) Rachita Rana, Director, MSI who has been with us with her unwavering support and encouragement since the inception of this conference and in bringing the compendium to its present state. We also extend our deepest gratitude to all the contributors who have added immense value to this volume by their valuable contributions. And last but not the least we extend our wholehearted thanks to the organizing committee and editors of GGSIPU sponsored national conference on "Digital Entrepreneurship" comprising of faculty, technicians and staff for their commendable team work in bringing the conference to its fruition. We are thankful to our honorable members of management for their continuous support and guidance for making this event a grand success.

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A Study on Social Commerce Apps -With Special Reference to Women Homepreneurs in the Digital Era

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Abstract: The rapid growth of digitalization has opened doors for countless opportunities one of which is digital entrepreneurship. Digital entrepreneurship refers to the digitalization of the entire process of business. Though it may seem to be an easier concept its scope is wider. In this growing competitive world, digitalization has promoted women's entrepreneurship process to a great extent by giving them access to the world of business at their comfort. Homepreneurs is one such business practice that has enabled women at home to establish themselves as entrepreneurs. The study will be focusing on the growth of homepreneurs in the current scenario, the effects of homepreneurs, and the development of social commerce apps that support homepreneurs especially women.

Keywords: Homepreneurs, Social commerce, Social commerce apps.

1. INTRODUCTION

Entrepreneurship in India has seen tremendous growth especially in the past decade in which a major role was played by the women in the subcontinent. The laws and policies implemented to improve entrepreneurship have paved the way for more women to venture into the industry while still being socially restricted. The initiative taken by the government of India to promote digitalization has enabled businesses to go the extra mile in achieving their business objectives. It has furthermore added to the development of women entrepreneurship by providing almost everything they need to reach people far across their boundaries and set up their dream business. Digitalization initially supported businesses just to promote their product, but now it plays a crucial role in monetizing their business productivity.

Digital entrepreneurship and women entrepreneurship has many kinds under their roof out of those our focus of the study is 'Homepreneurs'- A business entrepreneur who operates from home. As the name suggests, these enterprises do not have a formal structure. Homepreneurs are mostly women who are homemakers and also children below 18 years of age. Though this home-based entrepreneurship is not narrowed to a particular gender, this study focusses on women homepreneurs and the social commerce platforms or apps that have been developed or come forward to support them to a great extent.

2. SOCIAL COMMERCE

Web 2.0 and advancement of technology has evolved social commerce[i]. Social commerce has been seeing a rise in India for the past few years[i], E-Commerce enabled through social networking sites is considered to be a hustle free and more layman-friendly process which has made it a brighter opportunity for people with the urge to earn and succeed easily. Social commerce apps have been developed and most of them support homepreneurs either directly or indirectly. Though many such apps and platforms are present in the Indian market the most established platforms are Meesho, Facebook, Instagram, Shop 101, Glow road.

3. NEED FOR THE STUDY

Women are passionate to run their own business setup. There is a rise in the higher literacy rates among women. However, number of women in workforce has decreased to 28% in 2018 and leadership position is low. According to Sixth Economic Census, 13.76 per cent are women entrepreneurs in India[ii]. India is ranked 52nd in the Index of Women Entrepreneurs among the 57 surveyed countries. This setback accounts for various reasons such as Gender bias, Finance options, Networks and relationships, Family support, Child care and Safety[iii]. In this context, social commerce apps help overcome the networks & relationships and Finance constraints thereby providing a conducive environment for the homepreneurs. The study aims to identify the social commerce apps favoring the homepreneurs and also its impact.

4. OBJECTTIVES OF STUDY

1. To study the growth of home-entrepreneurship in reference to digitalization.
2. To identify and list out the top social commerce apps for homepreneurs.
3. To study the impact created and the expected impact of social commerce apps in reference to homepreneurs.

5. HOMEPRENEURSHIP IN INDIA

Women entrepreneurship or women-owned companies make up to 20% of all the enterprises in the country. Homepreneurship - Homepreneurship is the process of identifying opportunities, arranging the resources required to pursue these opportunities, and follow through business from

home. Even in today's growing world and forward economy women are still restricted and are provided comparatively limited opportunities in the field of business. The initiative of the Indian government to promote digitalization and the efforts of millions of minds to reach beyond abstract borders of limitations have paved the way for women to make use of the digital platforms to establish themselves as entrepreneurs of their choice. Homepreneurs in India evolved from selling door-to-door to selling across nations of the world with the help of digital marketing especially using social media in the social commerce framework.

6. SOCIAL COMMERCE APPS FOR HOMEPRENEURS

The commerce mediated by social media serves as the top priority of homepreneurs as it is easy to use and it provides easy access to the potential buyers around them. In the past decade, India has seen a rise in the development and usage of social commerce apps. Here is the list of the top social commerce apps in India according to a recent survey[iv]

1. Meesho: Meesho is an Indian based social commerce platform found by 2 IIT graduates. The name Meesho means "Meri Shop". It is an online reselling platform that also allows people to sell their products through the app. The growth of Meesho has reached a peak, especially after the lockdown in the year 2020 due to The Pandemic situation.
2. Shop101: Shop 101 enables merchants to sell online and via social media by creating an online store for them. It is a mobile-first platform which helps sellers build their website on their phone. It enables entrepreneurs to sell online and on social media with zero investment by providing an online storefront.
3. Glowroad: GlowRoad gives users access to a virtual shop, millions of products from trusted suppliers, payments, and shipping facilities thereby removing the hassles of starting an online business. While we do all the heavy-lifting, users can seamlessly sell products to their network and earn. Uncommon Team, Common vision, the common value is their motto. Glowroad is a networking site that supports women entrepreneurs to grow their businesses by exploring earning opportunities at their comfort.
4. Facebook: Facebook is one of the top social networking sites which was initially famous for its advertising. Later the app-enabled E-commerce facility was an opening for many businesses to sell online easily.
5. Instagram: This social media platform in the vein of youngsters and millennials across the globe. Instagram is owned by Facebook and it also has social commerce facilities in it. This platform serves as the best tool to directly get in touch with the customers as the features of E-commerce are very easy.
6. WhatsApp: WhatsApp is a social networking platform used by all age groups of people in India. It has become a primary platform for communication and reselling in the country.

7. THE GROWTH OF SOCIAL COMMERCE PLATFROMS

Social commerce has as a form of digital commerce has blurred the line between E-Commerce and Social media. Engaging consumers through social media and converting them into customers on the same platform is the highlight of social commerce. The growing population in this automated industrial generation prefers to get their needs satisfied at their comfort and the idea of earning at home with just smart work are the basic thoughts that lead to the success of digital entrepreneurship.

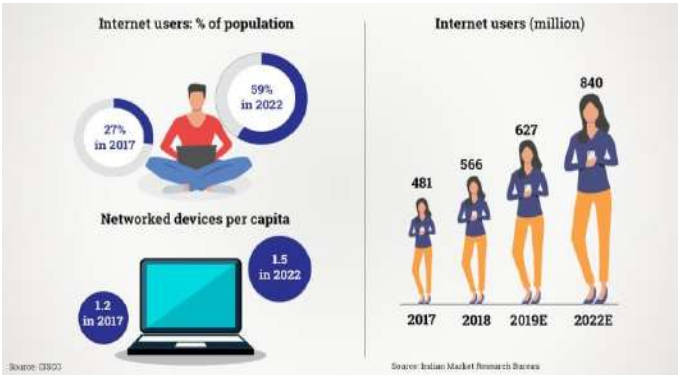

Fig. 1. Showing the expected growth of internet usage. (Source: benoriknowledge.com)

The drive of social commerce is the alarming increase in the usage of the Internet and smartphone penetration in the nation. The major form of advertisement for social commerce in this digital era is word of mouth enables by consumer interaction possibilities provided by social media platforms. This helps and support small businesses to know consumer ideology and build a market place for their products. According to researchers, by 2025 Social commerce will become the next frontier of the E-commerce industry and India's social commerce sector will be two times the size of the current e-commerce market within ten years.

8. IMPACT OF SOCIAL COMMERCE APPS ON HOMEPRENEURS

Social media channels and online market places have made it simple for women working from home to reach a new audience, deliver products, and receive payments. More and more women are choosing to turn Homepreneurs - Homemakers – turned – entrepreneurs – who work from the comfort of their home and at their own time.

Social commerce has made it easier for people especially women to operate without having to set up a physical store or storage space to sell and maintain cost balance in their business. It has also enabled greater communication. These

social commerce apps encourages homepreneurs to social selling[v].

According to the researchers conducted earlier Indian women find it hard to start a business and venture into the field as they have limited access to capital and restricted mobility therefore women-owned micro-enterprises were only 10% in the country. But with the rise of smartphone usage and internet penetration in the past decade social commerce, on-demand service platforms have become a part of their lifestyle. These changes have led to the rise of thousands of micro-entrepreneurs[vi] particularly women who now have become financially independent for the first time.

The social commerce segment is estimated to double the existing e-commerce market within 10 years. The market potential is assessed as $60-$70 billion by 2030[vii]. Online selling platforms as Meesho, Glowroad. Etc., have recorded a massive increase in the number of entrepreneurs selling in their platform. Out of 2 million resellers and entrepreneurs in Meesho 90% are women. Glowroad which operates in more than 400 cities across the globe has 20000 suppliers and access to millions of products. In India, social media apps such as WhatsApp and Facebook are used to sell products. The company which recorded 30 transactions per day now has grown to record 15000 transactions per day.

The upcoming social commerce application SHECO – Exclusively for women is enabling micro loans facilities through micro finance and co-operative societies. And also support with training & resources for successful entrepreneurship[viii].

After the pandemic social commerce, on the whole, has evolved on a huge scale as individuals started to find jobs and adequate payments in the social commerce platforms. It is estimated that by 2022, approximately 840 million people will have access to the internet and 60% of the population is likely to use smartphones[ix] and therefore the growth of social commerce is expected to be tremendous and many Indians are likely predicted to start their brand and business through social commerce.

9. CONCLUSION

Social commerce is now starting to become the next face of E-commerce. It has become a stepping stone for women both literate and illiterate. “Great things are not done by impulse but by a series of small things brought together- Vincent Van Gogh”, Digital entrepreneurship concept has helped millions of people especially women to gather all those small things that they needed to establish their business and become entrepreneurs. Social commerce plays a vital role in helping women easily achieve their goals by providing them a market place and a storefront. The easy accessibility and less complicatedness of this model of business have made it a better place for business. All the social commerce apps and social networking sites that promote social commerce have started seeing a rise in the use of their selling features already and are for sure going to gain maximum popularity as E-Commerce platforms in the next 10 years.

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Entrepreneurship Development in India

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Abstract: Entrepreneurship is gaining more value and attention in the present economic system of all developing and developed countries. Entrepreneurship is not only a key factor of economic status and condition but also an imperative for economic growth, productivity, innovation and employment. Mostly countries emphasis the youth entrepreneurship with straight and clear policy priorities, because youth is the strongest pillar of an economy of any nation. After globalisation when the international economic landscape and technological change creates greater uncertainty in the world economy, entrepreneurship is believed to offer new ways to meet economic, social and environmental challenges. This paper is highlighted the status and current scenario of entrepreneurship development in reference of India.

Keywords: Entrepreneurship, Challenges and issues for entrepreneur, current scenario, government initiatives.

1. INTRODUCTION

According to the Global Entrepreneurship Monitor (2007) report, India's High-Growth Expectation rate is only one-fifth of that of China. while China's nascent and new entrepreneurs appear to be the most growth-oriented, with more than 10 per cent anticipating high growth. According to the NSS (National Service Scheme) 62nd round, in rural India, almost 50 per cent of all workers are self-employed 57 per cent among males and nearly 62 per cent among females, The NSSO (National Sample Survey Organization) defines a self-employed person as "one who has worked in household enterprises as own-account worker; worked in household enterprises as an employer or worked in household enterprises as helper". The essential feature of the self-employed is that they have autonomy (decide how, where and when to produce) and economic independence (in respect of choice of market, scale of operation and finance) for carrying out their operation. According to the 5th Economic Census conducted by the Central Statistical Organization (CSO), there are 41.83 million establishments in the country engaged in different economic activities other than crop production and plantation.

A self-made individual who takes financial risks in setting up a business for profit is called an entrepreneur. Today, amidst a struggling economy, India has witnessed many start-up success stories including Flipkart, OYO, Ola Cabs, BookMyShow, Nykaa, Big Basket, and Swiggy to name a few. However, all self-employed people cannot call themselves entrepreneurs. The potential for growth and economic impact is what truly defines an entrepreneurial business.

"Start-ups have emerged as engines of growth for an economy. Entrepreneurship has always been the strength of India. Even today, young men and women have given up greener pastures elsewhere to contribute to India's growth. They are risk-taking and come up with disruptivesolutions to festering challenges. They recognise their knowledge, skills and risk-taking capabilities to create job opportunities in the nation.

Government of India tries to remove the road- blocks from the path of entrepreneurs. According to the statement of Finance Minister of India, Nirmala Sitharaman, "In recent years, entrepreneurs have faced countless obstacles in the business environment." "Ourgovernment would like to reassure taxpayers that we remain committed to taking measures sothat our citizens are free from harassment of any kind, Extreme harassment from tax officers was an issue that was addressed in the budget." (The Economics Times).

The government is now determined to empower Indian society, digitally. Introducinginvestments, technology, employment and seed funding for ideation and development progress. Crucial moves were also made to defer tax payment on employee stock option plan (ESOP) by 5-years. This is the best way to entice young start-ups to retain their talented employees during the initial years of business. Now taking more risks when performing on a large scale ispossible.

A. Background

The history of entrepreneurship is important worldwide, even in India. In the pre-colonial times the Indian trade and business was at its peak. Indians were experts in smelting of metals such as brass and tin. Kanishka Empire in the 1st century started nurturing Indian entrepreneurs and traders. Following that period, in around 1600 A.D., India established its trade relationship with Roman Empire. Gold was pouring from all sides. Then came the Portuguese and the English. They captured the Indian sea waters and slowly entered the Indian business. They forced the entrepreneurs to become traders and they themselves took the role of entrepreneurs. This was the main reason for the downfall of Indian business in the colonial times which had its impact in the post-colonial times too. The

colonial era makes the Indian ideas and principles rigid. A region of historic trade routes and vast empires, the Indian subcontinent was identified with its commercial and cultural wealth for much of its long history. Gradually annexed by the British East India Company from the early eighteenth century and colonized by the United Kingdom from the mid-nineteenth century, India became an independent nation in 1947 after a struggle for independence that was marked by widespread nonviolent resistance. It has the world's twelfth largest economy at market exchange rates and the fourth largest in purchasing power. Economic reforms since 1991 have transformed it into one of the fastest growing economies however, it still suffers from high levels of poverty, illiteracy, and malnutrition. For an entire generation from the 1950s until the 1980s, India followed socialist-inspired policies. The economy was shackled by extensive regulation, protectionism, and public ownership, leading to pervasive corruption and slow growth. Since 1991, the nation has moved towards a market-based system.[1] Entrepreneurship is the result of three dimensions working together: conducive framework conditions, well-designed government programmes and supportive cultural attitudes. Across these three perspectives of entrepreneurship, two major conclusions are apparent. Firstly, the economic, psychological and sociological academic fields accept that entrepreneurship is a process. Secondly, despite the separate fields of analysis, entrepreneurship is clearly more than just an economic function.

2. MATERIAL AND METHODS

A. Objectives of the Study

Each research has some purpose to study; so that a fine conclusion can we get. This study has also conducted with some following objectives:

1) To study the concept of entrepreneurship.
2) To study the importance of entrepreneurship in the growth of nation.
3) To study the challenges and reason to failure of entrepreneurship especially in India.
4) To study about government initiatives.

B. Research Methodology

To study the above objectives, the Descriptive method of research is design so that we can easily studies in depth with description of whole content.

C. Data Collection

The whole data is based on secondary collection. We used several sources to make our study better and meaningful. The main sources of collected data are; Published articles, research papers, published journals, government reports, newspapers, online contents, available facts and figures, magazines, websites, economic survey and statistics, etc.

3. ANALYSATION AND FINDINGS

A. Concept of Entrepreneurship

Entrepreneur is one who understands the market dynamics and searches for change respond to it and exploit it as an opportunity. The word “entrepreneur” is derived from the French verb, enterprendre”. It means “to undertake”. [2]

International Encyclopedia “An individual who bears the risk of operating a business in the face of uncertainty about the future conditions [3]

B. Importance of Entrepreneurship

- **Encourages Innovation:** Innovation is the fruit of entrepreneurship. Without innovation no industry, product and market can be successed. With the entrepreneurship processing and activities, like creative products, technologies, markets, increased quality of goods, and on others the innovation and entrepreneurship, increase GDP of an economy.
- **Creates Job Opportunities:** Entrepreneurship is single tool to create the employment with heavy rate. They provide entry-level jobs, which creates a big platformfor unskilled workers to get trained and gained experience. It is an essential element to prepare and enhance the skills of the workforce for large industries.
- **Boosts the Economy:** Entrepreneurship boost the creativity and when innovative products come in the market, then its effect takes place and new business opportunities are grow in market. In the developing country like India, further developments require to boost logistics support, capital investment, and qualified workers. So, there is no shortage of opportunities pools for budding entrepreneurs, who can provide employment for not just a qualified programmer, but to a construction worker as well.

Increases the Standard of Living: Entrepreneurship provide the verities for consumption with affordable price. And its also a job creator, which helps to increase individual earning and consumption both. It directly increases the standard of living of their households.

- **The Social Impact:** Entrepreneurs are ‘givers.’ They have struggled and worked hard to attain success, and always try to make the life of others easier. For example, young businessmen like, Bill Gates, Azim Premji, Warren Buffet, and Manoj Padaiyachi.

C. Challenges/ Reason to Failure

Entrepreneurial success is not the result of a single person’s efforts. There is always a team involved. The team is made up of other investors, working partners, employees, vendors, and clients. All play an important part in the success of the enterprise. Although other people are involved, there is a tendency to believe that they play

far less important roles and are easily replaced. At the end of the day, success or failure of the enterprise will be largely attributed to the entrepreneur

- Lack of Experienced Management.
- Few Trained or Experienced Manpower.
- Poor Financial Management.
- Rapid Growth/ Frequently change in Technology.
- Lack of Business Linkages.
- Weak Marketing Efforts.
- Lack of Information/ Reliable facts.
- Incorrect Pricing strategies.
- Improper Inventory Control.
- Short-term Outlook/ Limited Vision
- High tax rates.
- Complex legal formalities
- Lack of adaptable environment.
- Difficult to beat the competition of MNCs.
- Improper capital structure.
- Lack of technical and vocational education.
- Thinking pattern of people.
- Red-tapism and corruption.
- Fear of cut-throat competition.
- Lak of training and motivational centres (especially in rural area of India).
- Low spirit to grab opportunity due to uncertainty and risk factors.

D. Government Initiatives

The Government of India encourages the youth and other households like women to grab the market opportunities according to their capabilities and competency. Some of main schemes which are launched by Indian Government are as follow: [5]

- **Start-up India:** This initiativepromotes entrepreneurship by mentoring, nurturing and facilitating start-ups throughout their life cycle. This scheme launch in January 2016, the initiative has successfully given a head start numerous aspiring entrepreneurs.
- **Make in India:** Designed to transform India into a global design and manufacturing hub, the Make in India initiative was launched in September 2014. It came as a powerful call to India's citizens and business leaders, and an invitation to potential partners and investors around the world to overhaul outdated processes and policies, and centralize information about opportunities in India's manufacturing sector.
- **Atal Innovation Mission (AIM):** AIM is the Government of India's endeavour to promote a culture of innovation and entrepreneurship, and it serves as a platform for promotion of worldclass Innovation Hubs, Grand Challenges, start-up businesses and other self-employment activities, particularly in technology driven areas. In order to foster curiosity, creativity and imagination right at the school, AIM recently launched Atal Tinkering Labs (ATL) across India.
- **Support to Training and Employment Programme for Women (STEP):** STEP was launched by the Government of India's Ministry of Women and Child Development to train women with no access to formal skill training facilities, especially in rural India. The Ministry of Skill Development & Entrepreneurship and NITI Aayog recently redrafted the Guidelines of the 30- year-old initiative to adapt to present-day needs. The initiative reaches out to all Indian women above 16 years of age. The programme imparts skills in several sectors such as agriculture, horticulture, food processing, handlooms, traditional crafts like embroidery, travel and tourism, hospitality, computer and IT services.
- **Jan Dhan- Aadhaar- Mobile (JAM):** JAM, for the first time, is a technological intervention that enables direct transfer of subsidies to intended beneficiaries and, therefore, eliminates all intermediaries and leakages in the system, which has a potential impact on the lives of millions of Indian citizens.
- **Biotechnology Industry Research Assistance Council (BIRAC):** BIRAC is a not-for-profit Public-Sector Enterprise, set up by Department of Biotechnology to strengthen and empower emerging biotechnology enterprises.
- **Department of Science and Technology (DST):** The DST comprises several arms that work across the spectrum on all major projects that require scientific and technological intervention. The Technology Interventions for Disabled and Elderly, for instance, provides technological solutions to address challenges and improve quality of life of the elderly in India through the application of science and technology.
- **Stand-Up India:** Launched in 2015, Stand-Up India seeks to leverage institutional credit for the benefit of India's underprivileged. It aims to enable economic participation of, and share the benefits of India's growth, among women entrepreneurs, Scheduled Castes and Scheduled Tribes.
- **Trade related Entrepreneurship Assistance and Development (TREAD):** To address the critical issues of

access to credit among India's underprivileged women, the TREAD programme enables credit availability to interested women through non-governmental organizations (NGOs).

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** A flagship initiative of the Ministry of Skill Development & Entrepreneurship (MSDE), this is a Skill Certification initiative that aims to train youth in industry-relevant skills to enhance opportunities for livelihood creation and employability.
- **National Skill Development Mission**: Launched in July 2015, the mission aims to build synergies across sectors and States in skilled industries and initiatives. With a vision to build a 'Skilled India' it is designed to expedite decisionmaking across sectors to provide skills at scale, without compromising on quality or speed.
- **•Science for Equity Empowerment and Development (SEED):** SEED aims to provide opportunities to motivated scientists and field level workers to undertake actionoriented, location specific projects for socioeconomic gain, particularly in rural areas.

Some main examples of start-up and new ventures in India are as follows:

TABLE 1: Key Sectors of Start-Up

Key Sectors	Growth Rate	Popular Startup
• Ecommerce	22%	Flipkart, ShopClues, Snapdeal, etc.
• HealthTech	28%	Cult, Netmeds, GetActive, etc.
• Fintech	31%	PolicyBazaar, BankBaazar, PhonePe, etc
• EdTech	Potential to reach INR142 billion by 2021	Unacademy, BYJUs, Learning Delight, etc.
• TravelTech	Potential to reach INR986 billion by 2021	Yatra, GoIbibo, OYO, etc.
• Logistics	Potential to reach INR15, 595 billion by 2020	Delhivery, Blackbuck, etc
• Consumer Services	Potential to reach INR1088 billion by 2020	Swiggy, Grofers, Justdial, etc.

4. FINDINGS

A. Findings

- Small and medium scale enterprises (SME's) account for around 90% of businesses and 50% of employment globally. In India, entrepreneurial ventures at this scale contribute as much as 37% to the GDP and are the backbone of the economy.
- Still small enterprises contributed more in GDP.
- India got 68th rank out of 137 countries according to GEDI Statistics. [6]
- Government of India launched different schemes for different category of entrepreneurs.

TABLE 2: Government Scheme

Entrepreneurs Category	Government Schemes
Women Entrepreneur	At present, the GOI operates 27 schemes for Indian women operated by different departments and ministries. Some of are: IRDP, KVIC, TRYSEM, PMRY, EDPs, WDCs, etc. [7]
Youth Entrepreneur	Startup India Initiative, ASPIRE, MUDRA Bank, Ministry Of Skill Development and Entrepreneurship, Atal Innovation Mission, eBiz Portal, etc.
For All Entrepreneur	**Modified Special Incentive Package Scheme (M-SIPS), The Venture Capital Assistance Scheme,** Launched in 2012 by Small Farmers' Agri-Business Consortium (SFAC), Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)

5. CONCLUSION

According to the Nelson Madela's opinion, 'It always seems impossible until it is done.The growth is likely to increase leaps and bounds in the coming years and you as an entrepreneur shall not wait anymore to jump in.It is difficult to dampen the Indian entrepreneurial spirit. It has grown and competed in the global market despite the controls of the Indian government. Entrepreneurs have shown their ability to adapt to the changing economic environment and deal positively with the uncertainties in the market place. Yes, the joint family structure – the spawning ground for entrepreneurs – continues to evolve and compete effectively in the world market. But if that success is to be sustained, the economic reforms will also have to continue.

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A Study on Students Perceptionand Awarenss towards Goods and Service Tax in Andhra Pradesh

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Abstract: ***The main source of revenue to the government is tax. One is direct tax and another one is indirect tax. The direct tax is collected from salary earned by people, house property, capital gain tax whereas indirect tax is charges on goods and services by way of customs duty, excise duty, service tax, sales tax, value added tax etc. Now these all indirect taxes are replaced by one single tax that is "Goods and Service Tax (GST)". The study is conducted on students in Andhra Pradesh. The sample size is 100 and convenient sampling technique is used for the study. The structured questionnaire is prepared and collected data by using Google forms. The main objective of this study is to know the demographic profile of the students, to know students awareness about GST and to identify the students' perception towards GST in India. In the study it was found that many of the students are not aware about reverse mechanism in GST.The study concludes that most of the respondents are aware about GST and have positive perception towards implementation of GST in India.***

Keywords: **Perception, reverse charge, cascading effect.**

1. INTRODUCTION

The main source of revenue to the government is tax. It is mainly collected from individuals, Hindu undivided family, businesses, partnership firms and other entities. This revenue is used by the government for the welfare of the society, economic development and increasing the standard of living of people. The tax is levied not only on people but also on goods and services. There are two types of taxes is levied by the government. One is direct tax and another one is indirect tax. The direct tax is collected from salary earned by people, house property, capital gain tax whereas indirect tax is charges on goods and services by way of customs duty, excise duty, service tax, sales tax, value added tax etc. Now these all indirect taxes are replaced by one single tax that is "Goods and Service Tax (GST)".

In the year 2000, a committee set up to draft law for implementation of GST. In the year 2004, Kelkar committee suggested the idea for national goods and service tax. The Union Finance Minister, Shri P. Chidambaram had announced that the GST will be implemented from 1st April 2010 in Central Budget (2007-2008) meeting. In the year 2016, the GST law amended model is approved in both houses of parliament and also president gives acceptance for GST. In the year 2017 both LokSabhaand RajyaSabha passed four supplementary bills of GST and accepted by the cabinet.At last in the year 2017 the GST came into effect on 1st July, 2017 after passing the bill in the LokSabhaand RajyaSabha. But it nearly took 17 years from 2000 then for the law to implement.

The Goods and Service Tax (GST) was first implemented in the year 1954 by France to avoid tax-evasion. Around 160 countries across the world have approved GST within 62 years of its origin. Some countries like Brazil and Canada had adopted dual-GST model. The India implemented Canadian model of GST which is levied synchronously by the central and state government on goods and services. The main reason for adopting GST by many countries is this tax has the competence to raise revenue in the most transparent and efficient way. The objective of implementing GST is to avoid cascading effect of tax; the GST is levied on value added at every stage of supply chain from manufacturer to wholesaler, wholesaler to retailer, retailer to final consumer. The GST is applicable to whole of India including the Jammu and Kashmir states also.

One of the main feature of GST is it is a destination based tax. There are two types of taxes are charged on goods and services based on destination. One is Central Goods and Service Tax (CGST) and State Goods and Service Tax (SGST) is levied when the transaction takes place within the state. And another tax is Integrated Goods and Service Tax (IGST) is applicable when the transaction takes place outside the state. Integrated Goods and Service Tax (IGST) is nothing but it includes both CGST and SGST.

2. LITERATURE REVIEW

1. Student's awareness and knowledge on the implementation of GST in Malaysia" article by NurulhasniShaari et al in his study collected students opinion on the implementation of GST. In Malaysia GST was implemented on April 1st, 2015. Many of them do not know the meaning of GST in Malaysis. The objective of this study is to know the students' knowledge and awareness on Goods and Service Tax (GST). This research is conducted on degree students in UiTMJohar.

The sample size is 250 respondents and used random sampling method. The data was analyzed by using SPSS Version 21.0 to calculate frequencies and percentages. The major finding in his study was 90% of the students are aware about GST and students opinion that the GST will increase the prices of goods and services. The study concluded that it is necessary for the government and other responsible persons to create awareness to the young generation about GST by organizing seminars, workshops and by offering GST courses in education.

2. Mrs. ShettyDeepaThangamGeeta et al in his article titled "Students responsiveness on the implementation of GST in commerce stream" has collected opinions of students on GST implementation and effect of GST on people. Some students are positively responded towards implementation of GST and other students are responded negatively. The sample size of the study is 50 commerce students and random sampling technique is used for the study. The objective of the study is to identify the students' response on implementation of GST, Knowledge and issues of GST in Sivagangai district of Tamil Nadu. The data is collected by using structured questionnaire, websites, and journals and so on. The major finding in their study was the students are getting awareness about GST through newspaper, radio and Television and it is found that there is no significant difference between age and knowledge of the students on issue of GST because p value is more than 0.05 hence null hypothesis is accepted. The study concludes that it is necessary to include GST Course in commerce education.

3. STATEMENT OF THE PROBLEM

In India after several efforts GST was implemented. The Government is still trying to provide about how GST work and how this system helps to eliminate cascading effect of tax and reduce tax evasion. It is very necessary for the students to get knowledge about GST system. Hence, this study is conducted to know the students awareness and perception towards GST System in India.

4. OBJECTIVES OF THE STUDY

1. To study the demographic profile of the students.
2. To know students awareness about GST in India.
3. To identify the students perception towards GST in India.

5. RESEARCH METHODOLOGY

The research study is based on primary data. The sample size of the study was 100 respondents and convenient sampling technique is used. The data is collected by using Google forms and the data is analyzed and interpreted by using Statistical tools for social sciences (SPSS). The respondents includes only under graduate and post graduate students in different districts of Andhra Pradesh.

6. DATA ANALYSIS AND INTERPRETATION

TABLE 1: Demographic Profile of the Respondents

Variable	Categories	Frequency	Cumulative Percent
Age	18-20	19	19
	20-25	81	100
Gender	Female	59	59
	Male	41	100
Qualification	Under Graduate	28	28
	Post Graduate	72	100
Household Income	Less than 10, 000	35	35
	10, 000 – 20, 000	28	63
	20, 000 – 30, 000	20	83
	Above 30, 000	17	100
Year of Study	First Year	16	16
	Second Year	58	74
	Third Year	11	85
	Fourth Year	15	100
District	Chittoor	47	47
	Nellore	11	58
	Anantapur	6	64
	Prakasam	10	74
	Guntur	5	79
	Kurnool	9	88
	East Godavari	2	90
	Krishna	1	91
	Kadapa	6	97
	Gadwal	2	99
	Srikakulam	1	100
Residence	Urban	59	59
	Rural	41	100

Awareness of Students about Goods and Service Tax (GST)

H_0: There is no significant difference between Gender and awareness about digital wallet among students.

H_0: There is significant difference between Gender and awareness about digital wallet among students.

TABLE 2: Awareness Frequencies

		Responses		Percent of Cases
		N	Percent	
Awareness[a]	Do you aware about implementation of GST?	84	12.2%	86.6%
	Do you aware about registration limit of GST?	76	11.0%	78.4%
	Do u aware about Different Tax rates	83	12.1%	85.6%
	Do u aware about Taxable - Nontaxable items in GST	74	10.8%	76.3%
	Do u know about Input Tax Credit	74	10.8%	76.3%
	Do u know about time of supply	76	11.0%	78.4%
	Do u know value of supply	79	11.5%	81.4%
	Do u know place of supply	73	10.6%	75.3%
	Do u know about Reverse Charge	69	10.0%	71.1%
Total		688	100.0%	709.3%
a. Dichotomy group tabulated at value 1.				

In Table 2, 84% of the students aware about implementation of GST in India, 76% of the students are well aware about the registration limit of GST, 83% of the respondents are aware about the different tax rates charged by the government, 74% of the respondents are known about taxable items and non-taxable items defined under GST, 74% of the respondents have knowledge about Input tax credit. The 76%, 79% and 73% of students are aware about value of supply, place of supply and time of supply. And only 69% of the students are aware about reverse charge process in GST.

STUDENTS PERCEPTION TOWARDS GOODS AND SERVICE TAX

TABLE 3: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.854	.856	20

TABLE 4: Item Statistics

	Mean	Std. Deviation
GST increase the revenue of the country	2.11	.803
GST can overcome the sale and service tax which was introduced earlier	2.31	.720
GST is not burden to people	2.79	1.057
GST protects the interests of low income earners	2.47	.937
GST is the best system adopted by many countries	2.13	.884
GST will result in higher prices for goods and services	2.27	.941
No GST is imposed on exports of goods and services?	2.57	1.027
Goods and services may be effective in India	2.16	.788
The implementation of GST will not affect the current prices of the product	2.60	1.092
The 28% percent rate of GST is acceptable	2.72	1.055
The media campaign for GST information is effective	2.37	.917
I think the government spends the tax revenue on necessary welfare assistance	2.50	.969
The implementation of Goods and Services Tax (GST) will benefit the consumer	2.54	.926
GST reduced the cascading effect	2.41	.954
The lists of taxable and non-taxable items are well-defined	2.16	.813
Government has imposed GST on people without any preparation	2.34	1.007
GST will cause an increase in the cost of living	2.18	.821
GST increase the tax collection of Govt.	2.12	.856
GST is beneficial in long term	2.25	.936
GST increased burden on Common man	2.19	.940

The reliability of the questionnaire is checked through Chrobbach's alpha and acceptable Cronbach's alpha is 0.70. In the Table 3 shows that the Cronbach's alpha is 0.854, it means the questionnaire is found suitable and can be used for further study also.

The mean and standard deviation is also calculated on student's perception towards GST and it is shown in table 3. The five point likert scale is used for collecting data. Most of the respondents agree to the factor that the implementation of GST will not affect the current prices of the product since the mean score (2.60) is highest for this factor and the standard deviation is 1.092. Majority of the respondents neutrally agree that GST increase the revenue of the country and the mean score (2.11) for this factor is the lowest and the standard deviation is 0.803.

7. FINDINGS

1. Majority of the respondents are aware about GST implementation and different rate of taxes charged by the government of India and only few are aware about reverse charge mechanism in GST.
2. Majority of the students agree that due to Goods and Service Tax (GST) the current prices of goods and services are not affected.
3. The respondents accepted the highest tax rate of 28% which is charged on cement, paints, tobacco products, refrigerators etc.
4. Majority of the respondents have opinion that GST is imposed on people without preparation and it is necessary to provide media campaign to create awareness to the people.
5. Most of the respondents are positive towards GST implementation and they believe it will reduce tax evasion and cascading effect of tax.

8. SUGGESTIONS

1. It is necessary to create GST knowledge to students of UG and PG by introducing GST as subject.
2. The main objective of GST is to reduce tax evasion. To reach this objective it is necessary for the government to create GST information regarding registration process, tax rates and filing GST returns to common people otherwise people evade tax due to lack of information and fear of GST process.
3. Only 74% of the respondents are aware about input tax credit. It is necessary for the government to create awareness about ITC to reduce cascading effect of tax.
4. The important terms in GST are place, value and time of supply. On the basis of this information GST will be calculated. So it is necessary to create awareness on these concepts to the students.

9. CONCLUSION

One of the important measures to increase revenue for the country is Goods and Service Tax (GST). The young generation is the important asset for the country and they are the main factor for the progress and development of the country. It is necessary to provide necessary information to the students about GST through seminars, workshops, course and forum to increase awareness and knowledge towards GST.

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The Study of EWOM during Online Course Selection by the Students

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Abstract: Electronic word of mouth (e-WOM) becomes an important tool for online consumers for evaluating and selecting a product and service. e-WOM helps students in evaluating various courses offered by different online courses sites like Udemy, Coursera, edX. Students search and decide the course to gain extra skills and knowledge outside of their school curriculum. As some of the courses are free and some are paid the reviews of the different students and educators are important to be taken into consideration.

The study is conducted to gain insights about the e-WOM in selecting the online courses by the students and various variables and factors of e-WOM are also taken into consideration. Various studies related to the topic are taken into account so as to find the importance e-WOM plays while selecting the course online by the students.

The study depicts that there is a major transition from traditional classroom courses to online courses.

The study suggests variations in e-WOM valence have differing effects on attitudes, behavioural intentions, the perceived value of reviews, and the perceived influence of reviews on decisions for selecting online courses. The reviews of the students and the educators help in deciding whether the course worth the time and money.

Keywords: Consumer decision-making, consumer reviews, electronic word-of-mouth (e-WOM) communications, online course selection, online learners.

1. INTRODUCTION

Internet, social media, mobile apps, and other digital communications technologies have become part of everyday life for billions of people around the world. According to recent statistics for January 2020, 4.54 billion people are active internet users, encompassing 59 % of the global population (Statista, 2020).

In India, e-WOM is considered as a key driver that aids people in making an online purchase as 20–50% of online sales are influenced by e-WOM (Marketingbuzzar, 2015).

Online purchase behaviour (especially purchase intention) is an important aspect of online behaviour. However, along with the advancement of digital technologies, online shopping behaviour is getting affected by changing dynamic (in the form of new e-WOM characteristics) of the e-WOM communication process (Erkan and Evans 2016).

The online option has become the vehicle of choice for many to exchange opinions and share information (Hennig-Thurau et al. 2004; Gruen et al. 2006; Brown et al. 2007; Edwards et al. 2010).

With the emergence of the internet, e-WOM has become an important influence on consumers' product evaluation. Prospective customers visit websites and read reviews from other customers (e-WOM) to learn more about a product before making a purchase. e-WOM information also helps consumers form expectations of a brand prior to purchase because e-WOM information reduces uncertainty in decision-making processes for consumers (Krishnamurthy and Kumar, 2015).

Online lectures, courses for example massive open online courses, are rapidly gaining popularity in India due to the fierce competition for university entrance exams, certificate acquisition, re education programs for workers and lifelong education. Thus, online courses should become forerunners in the use of information technology in order to rejuvenate and find new and more sustainable directions (Jacobs, 2006). Online learners spread positive or negative word of mouth (WOM) on social network sites (SNSs) about the lectures they have taken. New learners can decide which online lectures are useful for them after reading electronic word of mouth (e-WOM), saving time and money. SNS users express their opinions and share information with other users.

The field of student perceptions of teaching and course recommendations represents an appropriate area in which to explore the role of e-WOM in consumer decision making. Education is a common, high involvement service experience for all students, and with the increased availability of online recommendation and evaluation information, students rely heavily on opinions of other students while making their course and professor choices. e-WOM helps students in

evaluating various courses offered by different online courses sites like Udemy, Coursera, edX. Students search and decide the course to gain extra skills and knowledge outside of their school curriculum. As some of the courses are free and some are paid the reviews of the different students and educators are important to be taken into consideration. For example, Brown, Baillie, and Fraser (2009) found that 71% of college students use RateMyProfessors.com (RMP) to select among professors. As examples of e-WOM, RMP and similar websites like RateYourProf.com and myEdu.com represent a voluntary effort of users to share teaching information with others.

Online lecture businesses should consider how to make the most of these new opportunities to be competitive and make the best use of learners' e-WOM because e-WOM plays an important role as an online information source (Andrea and Lorenz, 2016).

This study poses the following main questions:

- What are various variables and factors of e-WOM used in selecting online courses by students?
- How variations in e-WOM valence have differing effects on attitudes, behavioural intentions, the perceived value of reviews, and the perceived influence of reviews on decisions for selecting online courses?

2. AIM OF THE STUDY

The study is conducted to gain insights about the e-WOM in selecting the online courses by the students and various variables, factors of e-WOM, and e-WOM valence are also taken into consideration. The study generally contributes to the knowledge of marketers by providing insights into consumers' attitudes, behaviours, and consumer choice patterns that may come into play for other service or product decisions involving e-WOM. The literature on the positive versus negative (i.e., valence) nature of online recommendations is limited hence the study is conducted with respect to online course selection by students.

3. OBJECTIVES OF THE STUDY

To review the factors and variables of e-WOM used in selecting online course.

To investigate about the variations in e-WOM valence and their differing effects on attitudes, behavioural intentions, the perceived value of reviews, and the perceived influence of reviews on decisions for selecting online courses.

4. RESEARCH METHODOLOGY

The method used in this paper is a general literature review which provides an examination of the recent and current literature and covers different subjects in varying levels of completeness and comprehensiveness and secondary data is taken from the journals to elaborate the topic. The study describes about the use of e-WOM in selecting online course by the students.

The narrative form is the main characteristic of this type of review (Grant & Booth, 2009) that has been adopted in this paper. The searches are made from articles in Google Scholar, Web of Science, semantic scholar and various other useful sources.

5. DISCUSSION - LITERATURE REVIEW

A. Online courses and e-WOM

The key element of online course is the use of the internet. With the expansion of internet as a tool for exchanging information, online course businesses include a virtual space in their websites to share information among learners (Matute et al., 2016). Traditional WOM has evolved into e-WOM and internet has made WOM more rapid, convenient and pervasive, without face-to-face human communication and pressure (Lee et al., 2013; Phelps et al., 2004; Wanget al., 2016; Yeh and Choi, 2011). Several online course businesses advertised their website through interactive activities, but new learners tend not to trust the advertising (Brecht, 2012; Wieling and Hofman, 2010); they are much more trusting the experience of and information from other existing learners. Online reviews are perceived as helpful tools in obtaining information of products or services and reducing risks and uncertainty of buying (Tenget al., 2014).

Shin et al. (2014) regarded e-WOM as the spreading of online reviews, arguments, and recommendations that pertain to personal experiences with specific products or service providers with a view to generating persuasive effects on the targeted consumers. While people share WOM with their friends, family and colleagues, they also increasingly share e-WOM with strangers through various internet channels. People enjoy talking and posting online about products and services they have consumed. Nielsen.com (2012) demonstrated that 92 percent of 28, 000 internet users in 56 countries rely on the recommendations of friends and family, and about 70 percent of them rely on online reviewers/e-WOM. Thus, e-WOM is exercising strong influence over customer decision making (Lee and Tussyadiah, 2011).

Course and professor online reviews by peers, like RMP, are a variation on traditional WOM known as electronic word-of-mouth communications (e-WOM). e-WOM connects diverse individual consumers and extends the WOM network from one's immediate contacts to the entire Internet world (Cheung et al., 2009).

e-WOM differs from traditional WOM because e-WOM tends to include positive and negative information, is more voluminous in quantity, and consists of multiple sources of information readily available and organized for consumers (Chatterjee, 2001). Product review websites (e.g. consumerreview.com), retailers' websites (e.g. amazon.com), professor evaluation websites (e.g. RateMy Professors.com), brand websites, discussion forums, and messages boards on

social networking websites (e.g. Facebook, MySpace) are all examples of e-WOM communications.

Communication theory posits that e-WOM reviewers can function as both informants and recommenders because they may provide user-oriented product information as well as recommendations by previous consumers (Park, Lee, & Han, 2007). As an information-provider, e-WOM communications may be perceived as more credible, more consumer-oriented, and more subjective than seller-created reviews (Park, Lee, & Han, 2007).

As a recommender, the content of the review contains direct suggestions to potential consumers. The recommend function can play a powerful role as students undergo the process of choosing courses and instructors. For example, using two experiments, Edwards et al. (2007) established a causal link between information posted on RMP, students' subsequent evaluations of instructors, and, presumably, students' decisions about which instructors to take. Specifically, students who received positive e-WOM about instructors rated instructors as more credible and attractive as compared with students who received negative e-WOM or none at all.

Ratings and comments may represent deliberate attempts to express complaints or compliments about the course that are designed to be shared with others permanently and publicly. Ratings and comments may be positively valenced to encourage others or benefit the reputation of the course as a result of satisfaction; comments may be negatively valenced to warn others or to damage the reputation of the course as a result of dissatisfaction (Huefner et al., 2002).

a) Specific Course Selection by the Students

According to Kerin et. al carried their study by using questionnaire. Part one asked students to rate twelve preselected courses according to their perceived difficulty and relevancy and subsequently state whether or not they intended to en-roll in the course. A t-test for the difference between two independent means was used to determine whether perceived difficulty and perceived relevance differed by students' intention to en-roll in a course .Except for one course, no statistically significant difference (~10) exists with respect to perceived difficulty for those students who intend or do not intend to en-roll in the courses listed in the questionnaire. In the instance where perceived difficulty differed significantly, perceived difficulty was higher among those students who intended to en-roll in the course. Perceived relevancy of a course appears to be more closely associated with intention to en-roll in the courses listed in the questionnaire. In nine of the twelve courses listed, perceived relevancy was significantly higher for those planning to en-roll in a course. Part two of the questionnaire asked students to rank order eight factors they might consider in selecting a course. Kendall's Coefficient of Concordance was calculated to determine the degree of agreement among students regarding the importance of these factors. The computed W was 0.28, $p<.05$. Course relevancy in terms of personal interest in the subject area and course content appear to be the overriding factor in course selection for this sample and courses. Perceived difficulty of a course would seem to play a minor role in course selection. The findings suggest for the most part that students do not necessarily follow the path of least resistance in course choice in a non-requirement system.

b) How Do Students Select Specific Courses According to Kerin et. al the questionnaire asked students to rank order six sources of information they might use when selecting courses. The calculated W on the rankings of information sources was .60, $p<.01$. These data emphasize the role of informal and active information seeking among students in a non-requirement system. The study revealed that active information seeking by students through other than formal channels (student counsellors) serves to activate student interest in final course selections.

b. Factors and Variables of e-WOM used in selecting online courses

Komiak and Benbasat further built on belief-attitude-intention framework and proposed a trust model of electronic commerce adoption. The belief-attitude-intention framework that relates belief, attitude, and behavioural intention has been widely used in the study of online shopping adoption. This framework suggests that the attitude toward a particular object depends on the direct effects of beliefs about the object, while attitude has a direct positive impact on behavioural intention toward the object. Komiak and Benbasat distinguished two types of trust, namely cognitive trust and emotional trust. Cognitive trust basically comprises of the beliefs of online shopping, while emotional trust reflects the trusting attitude. Some of the variables such as Consumer trusting beliefs (perceived competence and perceived integrity) determine their attitudes (emotional trust) toward online shopping, and the emotional trust formed, in turn affects consumer intention to shop online.

In addition to these basic variables, Monsuwe et al. suggested that there exist exogenous factors moderating the relationships between the core constructs in the belief-attitude-intention framework of online shopping, such as consumer traits, situational factors, product characteristics, and previous online shopping experiences. Prospective online consumers usually get information regarding online shopping and the product they are interested to buy online before they take the action. Electronic word-of-mouth (e-WOM) in the form of online consumer review is believed to play an important role in determining consumer purchasing decision.

Lin et al. (2009) found evidence from a randomized experiment that expert recommendation has positive impacts on consumers' purchase intentions. Chang and Chin (2010) noted that recommendations are positively related to intentions to purchase online (scenario about buying a notebook computer) and directly affect consumers' choices.

Given the aforementioned outcomes, it is not surprising that similar results have been found in the education setting. As previously mentioned, Edwards et al. (2007) established a causal link between information posted on RMP and students' decisions about which instructor to take. Students who received positive e-WOM about instructors rated instructors as more credible and attractive as compared with students who received negative e-WOM or none at all. In the present study researcher present an experiment focusing on students' perceptions of online recommendations in the course selection process.

c. Variations in e-WOM valence and their differing effects on attitudes, behavioural intentions, the perceived value of reviews, and the perceived influence of reviews on decisions for selecting online courses

Lee et al in their study provide insights into the interrelationships between Perceived Usefulness (PU), Perceived Switching Cost (PSC), Perceived Web Security (PWS), Attitude Toward Online Lecture Website (ATW) and e-WOM about online lecture website. The hypothesis test results for total sample are as follows:

- The respondents are highly positive about an online lecture website in that the mean score of each construct is over 4, and the mean score of ATW is especially 5.247.
- PU among the antecedents of ATW most positively influences ATW; PWS has no statistically significant influence on ATW; ATW positively influences e-WOM.

In the study of Wanget al.(2009), only PU and PWS among the antecedents of cognitive and affective attitudes have significant impact on the attitudes and the influence of PU is the greatest on both cognitive and affective attitudes.

In the studies of Altawallben et al. (2015) and Yang and Yoo (2004), it was concluded that the influence of PU is the greatest on both cognitive and affective attitudes.

In the study of Tarhiniet al. (2017), however, it was revealed that PU influences students' Behavioural Intention (BI) toward e-learning but it is not the most significant factor.

Online lecture businesses should make students aware of the usefulness of online lectures and take a positive attitude toward websites regardless of the SC.

a) Attitude and Behavioural Intention with variation in e-WOM Valence

Clemons, Gao and Hitt (2006) found that strongly positive ratings can positively influence the growth of product sales.

Xia and Bechwati (2008) studied the impact of online reviews on consumers' choice using the concept of cognitive personalization and concluded that online reviews do indeed influence consumers' purchase intentions.

Lee, Park, and Han (2008) found that consumers conform to online consumer reviews and their attitudes become unfavorable as the proportion of negative online consumer reviews increases.

Lin et al. (2009) found evidence from a randomized experiment that expert recommendation has positive impacts on consumers' purchase intentions.

Chang and Chin (2010) noted that recommendations are positively related to intentions to purchase online and directly affect consumers' choices.

Vimaladevi and Dhanabkaym (2012) and Yali and Bayram (2012) reported that consumer reviews have a causal impact on consumer purchasing behaviour.

The study by Carla et al. (2013) indicate that positive-only (negative-only) reviews had very strong, positive (negative) influences on changing behavioural intentions towards the course. However, even though these reviews changed initial behavioural intentions, both types of reviews were perceived as equal with respect to the value/influence of the reviews. Conversely, mixed reviews had little influence on changing initial behavioural intentions and were perceived as having far less influence/ value than either positive or negative reviews.

The influence of information direction varies in terms of specific perceptual and behavioral outcomes. In particular, negative reviews were found to be more influential than positive and mixed reviews when it comes to attitudes toward the course, intention to take the course, and intention to recommend the course. Positive reviews are more likely than negative reviews and mixed reviews to result in higher confidence in course choice. Considering that negative reviews are likely to result in negative outcomes (i.e., attitudes and intentions)

b) Perceived value of reviews with Variation in e-WOM Valence

Previous research has examined consumer perceptions of reviews including the perceived value of the review, which refers to the perceived significance of the information learned (e.g., Kim & Gupta, 2012) and the e-WOM effect, which refers to the self-reported, direct influence of information on purchase decisions (e.g., Park & Lee, 2009). On the one hand, the impression management literature suggests negative information may be perceived to be more helpful than positive information (e.g., Skowronki & Calston, 1987). For example, Park and Lee (2009) found that the e-WOM effect is greater for negative e-WOM as compared to positive e-WOM. On the other hand, studies have also found the opposite effect within the context of e-WOM. For instance, East, Hammond, and Lomax (2008) found positive messages had a greater impact on outcomes than negative messages. One plausible explanation may be variance in information intensity (Floh, Koller, & Zauner, 2012), which suggests that stronger stimuli in either direction will produce stronger responses. By

contrast, less intense, mixed (positive and negative) stimuli will produce weaker responses (Floh, Koller, & Zauner, 2012).

Previous research has also suggested that two-sided messages in advertising may be perceived as more helpful and credible than one-sided messages (Mudambi & Schuff, 2010). Findings have indicated that negative comments in a set of e-WOM messages may be beneficial (Doh & Hwang, 2009) because the inclusion of some negative information may increase the perceived credibility of the source. However, recent research has indicated that mixed (positive and negative) reviews may be perceived as less valuable than positive or negative reviews (Edwards & Edwards, 2012). In an experimental study of mixed reviews about students' perceptions of instructors, Edwards and Edwards (2012) argue that mixed reviews do not provide the information necessary to make a judgment using simple heuristic information processing (e.g., unanimous peer opinions can be trusted). Instead, students faced with conflicting appraisals of an instructor or course will likely conclude that they do not have enough information to make an informed judgment (Edwards & Edwards, 2012)

c) Perceived influence of reviews on decisions for selecting online courses

Consumers use e-WOM communications to reduce the risks associated with product or service purchase (Hennig-Thurau & Walsh, 2003).

Cone notes that positive product reviews have a strong influence, with 87% of consumers stating that a favourable review has confirmed their decision to go through with a purchase.Gershoff, Mukherjee, and Mukhopadhyay (2003) found that recommendation sources could help build consumers' trust in specific products and, if recommendation sources aid effective decision-making in the purchase process, the consumer will be more likely to trust the recommendation.

Lin et al. (2009) found evidence from a randomized experiment using a high involvement product (notebook computer) and a low involvement product (shampoo) suggesting that expert recommendation and word-of-mouth have a positive impact on consumers' perceived trust and purchase intentions.

The experiment conducted by Carla et al. in the study centres on students' perceptions of online recommendations in a professor/course decision making process, the study more generally contributes to the knowledge of marketers by providing insights into consumers' attitudes, behaviours, and consumer choice patterns that may come into play for other service or product decisions involving e-WOM.

6. CONCLUSION

The study centres on students' perceptions of online recommendations in a course decision making process, the study more generally contributes to the knowledge of marketers by providing insights into consumers' attitudes, behaviours, and consumer choice patterns that may come into play for other service or product decisions involving e-WOM.

The study depicts that there is a major transition from traditional classroom courses to online courses. The study suggests variations in e-WOM valence have differing effects on attitudes, behavioural intentions, the perceived value of reviews, and the perceived influence of reviews on decisions for selecting online courses. The reviews of the students and the educators help in deciding whether the course worth the time and money.

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A Review on Data Mining and Its Techniques

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Abstract: In 1990s term data mining was firstly introduced and it is also known as Knowledge Discovery in Databases and it was coined byGregory Piatetsky-Shapiro . Basically data mining is the discovering of the hidden, unsuspected relationships amongst the data. It is a process by which we can find useful patterns from the large amount of data. Overall data mining is a multidisciplinary skill that uses the concepts of machine learning and artificial intelligence to extract the information to appraise the future events. The aim of this paper is to understand the concept of Data mining.

Keywords: SVM, Clustering, Regression.

1. INTRODUCTION

Data mining is a predictive analysis which follows logical process in simpler words data mining is a set of techniques that discover patterns in a large data set and it is designed to explore the data. Now days data mining is used to diverse industries for example education, insurance, banking, retail, super markets etc. The main aim of this technique is to find the patterns that were previously unknown. There are so many alternative names for data mining such as knowledge extraction, data pattern analysis, information harvesting and many more.

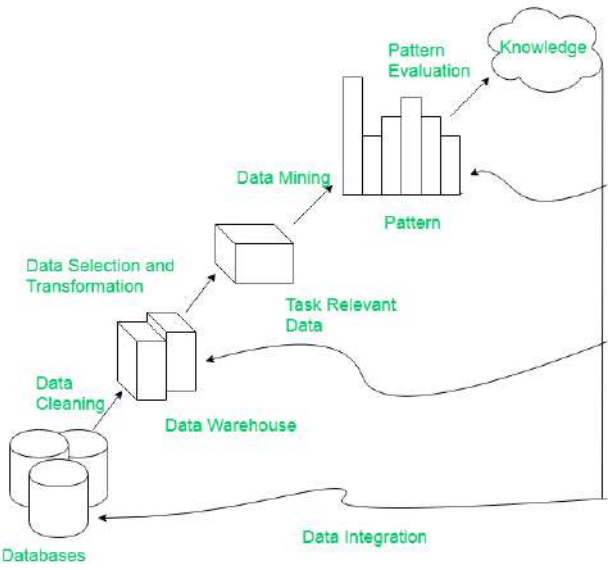

Fig. 1. Data Mining Process

The key properties of data mining are:

(i) Automatic discovery of patterns

(ii) Prediction of likely outcomes

(iii) Creation of actionable information

(iv) Focus on large data sets and databases

2. PROCEDURES OF DATA MINING:

Data Mining is defined as a brilliant techniques that are applied to bring out patterns potentially functional. There are various steps involved in data mining and these are given below:

1. Define the problem
2. Identify required data
3. Train and test
4. Prepare and Process
5. Model the Data
6. Verify and deploy

3. UPPORTS MULTIPLE DISCIPLINES

In fact Data Mining is confluence of multiple disciplines such as Database technology, statistics, Artificial Intelligence, Machine learning, Information Science and many more

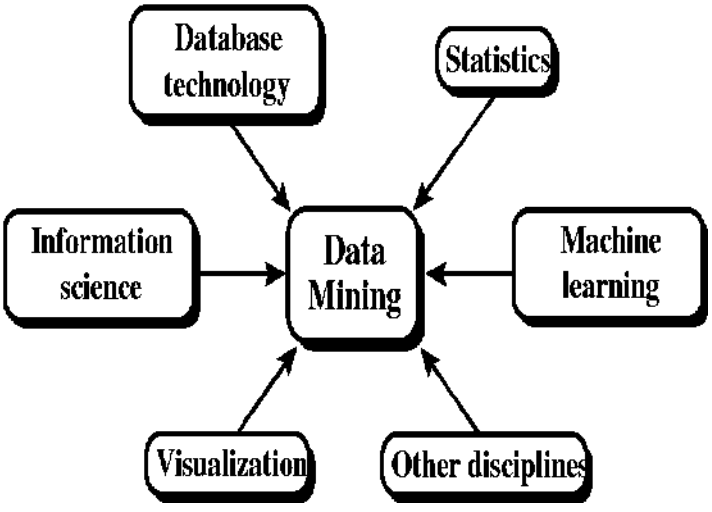

Fig. 2. Data Mining an Interdisciplinary Field.

4. PRIME CHALLENGES IN DATA MINING

(i) Scalability of data mining algorithms

(ii) Parallel, distributed, stream, and incremental mining methods

(iii) Handling high-dimensionality

(iv) Handling noise, uncertainty, and incompleteness of data

(v) Internalization of constraints, expert knowledge, and background knowledge in data mining

(vi) Pattern evaluation and knowledge integration

(vii) Invisible data mining

(viii) Shielding of security, privacy, integrity in data mining

5. DATA MINING TECHNIQUES

Data Mining is very highly effective technique It operates with analysis and prediction .Recently various data mining techniques are used in different technical fields and the these techniques are given below:

(i) Tracking pattern: Tracking pattern is innate for many people. Tracking pattern is one of the fundamental data mining technique in which we recognize patterns in our data sets.

(ii) Classification: Classification is the process of forecasting the class of a new item. This technique is used to obtain relevant information about data and metadata. Basically it deals with the learning and classification. In learning mode the training data are data analyzed by the classification algorithm whereas in classification test data are used to estimate the accuracy of the classification rules types of classification rules.

Types of classification models:

(a) Classification by decision tree induction

(b) Bayesian Classification

(c) Neural Networks

(d) Support Vector Machines (SVM)

(e) Classification Based on Associations

(iii) Association: This Data Mining technique is related to statistics. It specifies that certain data are linked to other data. An Association creates rules that describe how often events have occurred together. In this technique we can find hidden pattern in the data set.

Types of association rule

(a) Multilevel association rule

(b) Multidimensional association rule

(c) Quantitative association rule

(iv) Outlier Detection:

Outlier detection plays a remarkable role in the Data mining field. It is valuable in various fields such as Credit or debit Card, fraud detection. There are four outlier detection techniques and these are: Numeric outlier, z –score, DBSCAN and isolation forest. There are many approaches for detecting outliers some of them are described below:

(a) Extreme value analysiss: It is the most common form of outlier detection and it is significant for one dimension data. Z test and students t -test are outstanding example of extreme value analysis.

(b) Linear models: In linear models data is modeled into a lower dimension subspace with the usage of linear correlation. PCA is the most common example for linear models.

(c) Probabilistic and statistical models: Both of these models uses fixed distributions for data .These models uses EM methods to estimate the parameters of the model.

(d) Proximity based models: In this model outliers are modeledas a points about lying from the rest of the observation.

(e) Information-Theoretic model: This model increases the minimum code length to describe a data set.

(v) Clustering:

Cluster is a collection of data objects in which similar data is grouped in the same cluster whereas variant data is grouped in the same cluster.

Types of clustering methods:

(a) Partitioning methods

(b) Hierarchical Agglomerative methods

(c) Density based methods

(d) Grid based methods

(e) Model based methods

(vi) Regression

This technique deals the prediction of a value. Regression is used to clarify the probability of the specific variable. Regression, essentially a form of planning and modeling.

Types of Regression methods:

(a) Linear Regression

(b) Multivariate Regression

(c) Non Linear Regression

(d) Multivariate Non Linear Regression

(vii) Prediction

Prediction is the precious Data mining technique because it analyses the past and future events.

6. DATA MINING TOOLS

There are two popular Data mining tools that are widely used in industry one of them is R Language- it is an open source tool that is used for statistical computing and graphics. Oracle data mining is another tool that is used in data mining and it is also known as Oracle advanced analytics database, basically this tool allows data analyst to generate insights and makes future predictions.

7. APPLICATIONS OF DATA MINING

i) Weather forecasting.

ii) E-commerce.

iii) Self-driving cars.

iv) Hazards of new medicine.

v) Space research.

vi) Fraud detection.

viii) Stock trade analysis.

viiii) Business forecasting.

ix) Social networks.

8. CONCLUSION

Now a days Data mining is a very popular topic and the main aim of Data mining is the prediction of human behavior which predicts future trends basically it is a "decision support" process in which we can research for patterns of information in data. In this paper we have discussed on its architecture, procedures, challenges, techniques, with some rules data mining is one of the most powerful technique that helped research researchers, industrialist, entrepreneurs to extract valuable information from use set of data.

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A Study on Financial Services and Markets

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Abstract: Financial markets play a vital role in facilitating the smooth operation of capitalist economies by allocating resources and creating liquidity for businesses and entrepreneurs. The markets make it easy for buyers and sellers to trade their financial holdings. Financial markets create securities products that provide a return for those who have excess funds (Investors/lenders) and make these funds available to those who need additional money (borrowers).

The stock market is just one type of financial market. Financial markets are made by buying and selling numerous types of financial instruments including equities, bonds, currencies, and derivatives. Financial markets rely heavily on informational transparency to ensure that the markets set prices that are efficient and appropriate. The market prices of securities may not be indicative of their intrinsic value because of macroeconomic forces like taxes.

Keywords: Capitalist, Economies, Resources, Liquidity, Entrepreneur, FinanciaL, Markets, Securities, Products etc.

1. INTRODUCTION

A financial market is a market in which people trade financial securities and derivatives at low transaction costs. Some of the securities include stocks and bonds, raw materials and precious metals, which are known in the financial markets as commodities. The term "market" is sometimes used for what are more strictly exchanges, organizations that facilitate the trade in financial securities, e.g., a stock exchange or commodity exchange. This may be a physical location (such as the NYSE, LSE, JSE, BSE) or an electronic system (such as NASDAQ). Much trading of stocks takes place on an exchange; still, corporate actions (merger, spinoff) are outside an exchange, while any two companies or people, for whatever reason, may agree to sell stock from the one to the other without using an exchange. Trading of currencies and bonds is largely on a bilateral basis, although some bonds trade on a stock exchange, and people are building electronic systems for these as well, to stock exchanges. There are also global initiatives such as the United Nations Sustainable Development Goal 10 which has a target to improve regulation and monitoring of global financial markets.

Financial markets refer broadly to any marketplace where the trading of securities occurs, including the stock market, bond market, forex market, and derivatives market, among others. Financial markets are vital to the smooth operation of capitalist economies.Financial markets are small with little activity, and others, like the New York Stock Exchange (NYSE), trade trillions of dollars of securities daily. The equities (stock) market is a financial market that enables investors to buy and sell shares of publicly traded companies. The primary stock market is where new issues of stocks, called initial public offerings (IPOs), are sold. Any subsequent trading of stocks occurs in the secondary market, where investors buy and sell securities that they already own.

2. OBJECTIVES OF THE STUDY

- To study the various functions of Financial Markets prevailing
- To identify the components of Financial Markets.
- To analyse the Financial Markets in long run.

3. FUNCTION OF FINANCIAL MARKETS

A. Intermediary functions: The intermediary functions of financial markets include the following:

- **Transfer of resources**: Financial markets facilitate the transfer of real economic resources from lenders to ultimate borrowers.
- **Enhancing income**: Financial markets allow lenders to earn interest or dividend on their surplus invisible funds, thus contributing to the enhancement of the individual and the national income.
- **Productive usage**: Financial markets allow for the productive use of the funds borrowed. The enhancing the income and the gross national product.
- **Capital formation**: Financial markets provide a channel through which new savings flow to aid the capital formation of a country.
- **Price determination**: Financial markets allow for the determination of the price of the traded financial assets through the interaction of buyers and sellers. They provide a sign for the allocation of funds in the economy based on the demand and for the supply through the mechanism called price discovery process.
- **Sale mechanism**: Financial markets provide a mechanism for selling of a financial asset by an investor so as to offer the benefit of marketability and liquidity of such assets.
- **Information**: The activities of the participants in the financial market result in the generation and the

consequent dissemination of information in the various segments of the market. So as to reduce the cost of transaction of financial assets.

B. Financial Functions

- Providing the borrower with funds so as to enable them to carry out their investment plans.
- Providing the lenders with earning assets so as to enable them to earn wealth by deploying the assets in production debentures.
- Providing liquidity in the market so as to facilitate trading of funds.
- Providing liquidity to commercial bank
- Facilitating credit creation
- Promoting savings
- Promoting investment
- Facilitating balanced economic growth
- Improving trading floors

4. COMPONENTS OF FINANCIAL MARKET

Based on market levels

- **Primary market**: A primary market is a market for new issues or new financial claims. Therefore, it is also called a new issue market. The primary market deals with those securities which are issued to the public for the first time.
- **Secondary market**: A market for secondary sale of securities. In other words, securities which have already passed through the new issue market are traded in this market. Generally, such securities are quoted on the stock exchange and it provides a continuous and regular market for buying and selling of securities.An over-the-counter (OTC) market is a decentralized market—meaning it does not have physical locations, and trading is conducted electronically—in which market participants trade securities directly between two parties without a broker. An OTC market handles the exchange of publicly traded stocks that are not listed on the NYSE, NASDAQ, or the American Stock Exchange. In general, companies that trade on OTC markets are smaller than those that trade on primary markets, as OTC markets require less regulation and cost less to use.

  Simply put, primary market is the market where the newly started company issued shares to the public for the first time through IPO (initial public offering). The secondary market is the market where the second hand securities are sold (security Commodity Markets).

Based on security types

- **Money market**: Money market is a market for dealing with the financial assets and securities which have a maturity period of up to one year. In other words, it's a market for purely short-term funds.Typically the money markets trade in products with highly liquid short-term maturities (of less than one year) and are characterized by a high degree of safety and a relatively low return in interest. At the wholesale level, the money markets involve large-volume trades between institutions and traders. At the retail level, they include money market mutual funds bought by individual investors and money market accounts opened by bank customers. Individuals may also invest in the money markets by buying short-term certificates of deposit (CDs), municipal notes or U.S. Treasury bills, among other examples.
- **Capital market**: A capital market is a market for financial assets that have a long or indefinite maturity. Generally, it deals with long-term securities that have a maturity period of above one year. The capital market may be further divided into (a) industrial securities market (b) Govt. Securities market and (c) long-term loans market.
- **Equity markets**: A market where ownership of securities is issued and subscribed is known as the equity market. An example of a secondary equity market for the shares is the New York (NYSE) stock exchange.
- **Debt market**: The market where funds are borrowed and lent is known as debt market. Arrangements are made in such a way that the borrowers agree to pay the lender the original amount of the loan plus some specified amount of interest.A bond is a security in which an investor loans money for a defined period at a pre-established interest rate. You may think of a bond as an agreement between the lender and borrower that contains the details of the loan and its payments. Bonds are issued by corporations as well as by municipalities, states, and sovereign governments to finance projects and operations. The bond market sells securities such as notes and bills issued by the United States Treasury, for example. The bond market also is called the debt, credit, or fixed-income market.
- **Derivative markets**: A market where financial instruments are derived and traded based on an underlying asset such as commodities or stocks.A derivative is a contract between two or more parties whose value is based on an agreed-upon underlying financial asset (like a security) or set of assets (like an index). Derivatives are secondary securities whose value are solely derived from the value of the primary security that they are linked to. In and of itself a derivative is worthless. Rather than trading stocks directly, a derivatives market trade in futures and options contracts, and other advanced financial products, that derive their value from underlying instruments like bonds, commodities, currencies, interest rates, market indexes, and stocks.
- **Forex Market:** The forex (foreign exchange) market is the market in which participants can buy, sell,

exchange, and speculate on currencies. As such, the forex market is the most liquid market in the world, as cash is the most liquid of assets. The currency market handles more than $5 trillion in daily transactions, which is more than the futures and equity markets combined. As with the OTC markets, the forex market is also decentralized and consists of a global network of computers and brokers from around the world. The forex market is made up of banks, commercial companies, central banks, investment management firms, hedge funds, and retail forex brokers and investors.

- **Financial service market**: A market that comprises participants such as commercial banks that provide various financial services like ATM. Credit cards. Credit rating, stock broking etc. is known as financial service market. Individuals and firms use financial services markets, to purchase services that enhance the workings of debt and equity markets.
- **Depository markets**: A depository market consists of depository institutions (such as banks) that accept deposits from individuals and firms and uses these funds to participate in the debt market, by giving loans or purchasing other debt instruments such as treasury bills.
- **Non-depository market**: Non-depository market carry out various functions in financial markets ranging from financial intermediary to sell, insurance, etc. The various constituencies in non-depositary markets are mutual funds, insurance companies, pension funds, brokerage firms etc.

5. ANALYSIS OF FINANCIAL MARKETS

Much effort has gone into the study of financial markets and how prices vary with time. Charles Dow, one of the founders of Dow Jones and Company and The Wall Street Journal, enunciated a set of ideas on the subject which are now called Dow theory. This is the basis of the so-called technical analysis method of attempting to predict future changes. One of the tenets of "technical analysis" is that market trends give an indication of the future, at least in the short term. The claims of the technical analysts are disputed by many academics, who claim that the evidence points rather to the random walk hypothesis, which states that the next change is not correlated to the last change. The role of human psychology in price variations also plays a significant factor. Large amounts of volatility often indicate the presence of strong emotional factors playing into the price. Fear can cause excessive drops in price and greed can create bubbles. In recent years the rise of algorithmic and high-frequency program trading has seen the adoption of momentum, ultra-short term moving average and other similar strategies which are based on technical as opposed to fundamental or theoretical concepts of market behaviour.

The scale of changes in price over some unit of time is called the volatility. It was discovered by Benoit Mandelbroat that changes in prices do not follow a normal distribution, but are rather modeled better by Levy stale distributions. The scale of change, or volatility, depends on the length of the time unit to a power a bit more than 1/2. Large changes up or down are more likely than what one would calculate using a normal distribution with an estimated standard deviation.

6. CONCLUSIONS

From the study we can conclude that there are many financial markets which has many functions like intermediary functions and Financial Functions like borrowing of money, Transfer of resources, Enhancing the income, Price determination and providing liquidation which will help the nation to develop internationally.

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Consumer Perception on Role of E-Commerce IN Present Era

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Abstract: When it comes to communication in the present world, the internet is becoming the foremost priority for consumers. India has more than 110 million internet users, out of which one half opts for online purchases, and the numbers are rising sharply every year. As it is a fact that all consumers do prefer online shopping rather than offline for a variety of purposes such as to shop, invest, make payments, internet banking etc. In the contemporary world, buying products and other services play a vital role for the consumers in E-business. Millions of consumers do various transactions via E-Commerce.

This paper aims at systematically designed to the level of consumer perception on the role of E-commerce in the present era. Further research consolidates to understand consumer perception in a multiple combination of models and frameworks, which helps to recognize and build digital entrepreneurship.

Keywords: Consumer Perception, E-Commerce, Trust, Entrepreneurship

1. INTRODUCTION

Internet marketing is conceptually different from other marketing channels and internet promotes a one to one communication between the seller and the end user with round the clock customer service. Today, business internet marketing is the fastest growing segment of online commerce. The major difference between traditional and online selling is the extent of interaction between the consumer and the seller.

Increasing numbers of people are gravitating towards more intensive use of the Internet as the accessibility of technology, the availability of information, and the ability to interact through the Internet increase and evolve. Obvious capabilities of the Internet include avenues for gathering information, purchasing a product, or rendering a service. These advances in Internet technology allow for the expansion of shopping options beyond traditional methods that may be more time consuming. Issues with having to physically gather information with offline shopping methods are alleviated, and customers are better able to efficiently use their time. For instance, instead of having to physically visit different stores to compare prices or rely on circular pamphlets in newspapers, a consumer is able to search and retrieve needed information through the Internet. The Internet explosion has opened the doors to a new electronic world. Consumers are now able to use the Internet for a variety of purposes such as research, communication, online banking, and even shopping. With such advantages, the Internet is rapidly becoming the main method of communication and of conducting business conveniently. With a growing number of households turning towards the Internet and the world of e-commerce to shop, invest, make payments, and do online banking, new technological advancements will have to come about to make these transactions secure. However, not all consumers are participating in online transactions as part of the Internet boom. As more and more businesses continue to establish an online presence, they are finding that some consumers are still reluctant to shift in that same direction. For various consumers there are still concerns with security and passing personal data over the Internet. There is a disparity between the number of consumers who visit a site and the number of actual purchases being made (Shim et al., 2001; Changchit, 2006).

2. CONSUMER PERCEPTION

Perception is the meaning that a person attributes to incoming stimuli gathered through the five senses – Sight, hearing, touch, taste and smell. Certainly a buyer's behaviour is influenced by his or her perceptions of a good or service. Researchers now recognise that people's perception depend as much on what they want to perceive as on the actual stimuli. A person's perception of an object or event results from the interaction of two types of factors.

1. **Stimulus Factors:** Characteristics of the physical object such as size, color, weight, and shape.
2. **Individual Factors:** Unique characteristics of the individual, including not only sensory processes but also experience with similar inputs and basic motivations and expectations.

Customer perception is a marketing concept that encompasses a customer's impression, awareness and consciousness about a company or its offerings. Perception is the process by which we select, organize, and interpret information inputs to create a meaningful picture of the world. A customer's perception is

affected by advertising, reviews, public relation, social media, personal experience and other factors. In general, perception is gathering information through seeing, hearing, touching, tasting, smelling and sensing. Perception is the process by which these stimuli are selected, organized, and interpreted. Customer perception enables the marketing manager to understand how the customer views a product or service and then formulate the strategy accordingly.

3. FEATURES OF CONSUMER PERCEPTION

How an individual perceives a stimulus or information depends on a number of characteristics of the perception itself. An individual's processing, evaluation, and explanation of particular information depend largely on the features or characteristics of perception. They are

1. Perceptual cues;
2. Perceptual selectivity;
3. Perceptual organization; and
4. Perceptual thresholds.

4. STAGES OF CONSUMER PERCEPTION

When a consumer makes initial contact, perception establishes the meaning about a product or brand and it is described as consumer information processing. In receiving brand marketing communicate messages at this stage all of the senses are engaged. Four distinct stages of perception occur during consumer information processing: sensation, attention, interpretation and retention.

- **Sensation**

Sensation describes what happens when a person's senses are initially exposed to the external stimulus of a product. Through sight, sound, smell, taste and texture the sensory receptors of a consumer are engaged by product or brand cues.

- **Attention**

To the external stimulus from a product or brand in consumer information processing, attention occurs when a person lingers and gives mental processing capacity.

- **Interpretation**

From a product or brand marketing interpretation occurs when a person assigns a meaning to the sensory stimulus. Comprehension is aided by expectations and familiarity. To retrieve previous experience with the brand or a similar brand a consumer scans his memory.

- **Retention**

The conclusion of the consumer perception process is the retention stage and it marked by the storage of product or brand information in short-term and long-term memory.

5. RESEARCH OBJECTIVES

1. To understand the concept of Consumer Perception on Role of E-Commerce in Present ERA.
2. To study the various E-commerce activities specifically in terms of buy products and services through online.
3. To study and analyze the importance of consumer perception.

6. RESEARCH METHODOLOGY

The present study is descriptive in nature. The study is based on secondary data and has been collected from various Books, reputed Journals, Articles and Websites.

7. REVIEW OF LITERATURE

The execution of business transactions over the Internet is called E-business. E-business activities enhance supply chain performance over the Internet across by enabling sharing information, sales activities, ordering and order tracking, etc. Companies can also use the Internet to display all its product variety and to increase the collaboration in product design (Chopra and Van Mieghem, 2001)

Nikakhtar and Jianzheng (2011) explored e-commerce in supply chain management and presented a detailed consideration of e-commerce process in describing supply chain and all its necessities and requirements in today's competitive world. They also explain the ways of achieving competitive advantage by the use of electronic supply chain. They suggested customer focus strategy to programmers and decision makers. They suggested effective supply chain which benefits from electronic tools for further coordination and integration of supply chain.

Yang (2012) realized effective supply chain management as the strategy choice to enhance firm competitiveness and suggested e-commerce to provide important means for effective operational supply chain management. They suggested the use of network platform in order to fully relate the customers, retailers, manufactures, suppliers and employers, improve greatly the level of enterprise management, manage both supply and demand, collect market information in a very short time, improve the product rate and economic benefit, reduce the production cost and fasten the circulation of the products, and enhance the core competitive force of enterprise. He concluded that by the help of e-commerce technology, supply chain management can be further developed and the enterprise can catch market opportunities.

Alrubaiee, Alshaibi and Al-Bayati (2012) researched the interrelationships among B2B E-Commerce Benefits, E-Marketplace Usage and Supply Chain Management by examining the mediating impact of e-marketplace usage on the relationship between e-commerce benefits and supply chain management through the companies in different industries by employing covariance-based structural equation modeling.

They identified a strong and positive effect of e-commerce benefits on e-marketplaces usage but no significant direct link between e-commerce benefits and supply chain management. They concluded that e-commerce provides many benefits to both sellers and buyers; sellers can access widely distributed narrow market segments while buyers can benefit by accessing global markets with larger product availability from a variety of sellers at reduced costs. Finally, they recommend that managers should focus on making B2B e-commerce as well as e-marketplace usage an integral part of their business strategy.

Kumaran and Ganesan (2011) also researched the influence of E-Business in SME's Supply Chain Management and identified the power of e-business technology for communication at the buyer-supplier interface. They suggested e-business in SME's supply chain management in order to enhance company performance by increasing speed, accurate and intelligent decision making in order to form strategies for purchasing decisions, portfolio responsibilities, and customer demand forecasts and lead time reduction. They reported SME's should be capable of developing internal control systems aligned with the varying needs of their customers and the supply chain in order to be survived. They recommended using various types of commercial ERP systems to SMEs in order to enhance their SCM.

8. FINDINGS

It is found that consumers do prefer online shopping rather than offline for a variety of purposes such as to shop, invest, make payments, internet banking etc.

1. Due to Emerging Trends Technologies has become very easy and faster to buy products and take services through by different websites.
2. It is also found that e-commerce is plays a vital role to develop or build the digital entrepreneurships among Youngsters.
3. Consumers have complete trust in various websites where they feel safe and secure purchasing various brands.
4. This study helps to know about the level of perception of consumers in terms of trust, reliability, convince regarding E-commerce.
5. It is also found that E-Commerce is changing the pattern of life style of consumers is present Era.

9. CONCLUSIONS

The study concludes that there is a huge scope of implementation and development of new e-business activities which crates and meets the consumer requirements and demands in this present century, especially young generation prefers convenient transaction through various electronic modes. Although, there are small scale or local E-Commerce websites which are grabbing opportunity in the expansion of their business by using tactics of discounts, offers, promotion etc… on their products.

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Role & Importance of ICT in Recent Education System

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Abstract: This paper provides an outlook regarding the future of ICT's which creates a connection with recent education system.It has power that can changed various aspect of the human's lives. The positive effect of the Information Communication Technologies on every area of the human life across the approximate previousthree tenner has been very huge. ICT evolution begin with the knowledge-based economy with continuously advancement of technology in different sectors as well as innovation in education system. With the help of ICT, we can be able to transform teacher centered learning to student centered learning. Information communication technology also highlight the participation of every educational participants (producer-user) and their impact in transforming the teaching-learning process.The pace of inclusion of technology in education system as well as in others i.e., individual, groups and business organization are increasing. We are moving toward rapid digitalization.

Keywords: ICT, education, innovation, perspectives, digitalization.

1. INTRODUCTION

1.1 Define Information Communication Technology?

ICT is stands for "Information Communication Technologies". ICT is a term that is used for manipulation as well as communication of useful information. It considers all the existing and potential uses of digital technologythat includes all digital technologies for the rectification as well as communication of information. We can't define ICT in simple words because changes occurring in ICTin fast rate. ICT including various factor like transmission of digital information, collection of data digitally, storage of data as well as manipulation of information.

The definition is including by guidance of the QCA schemes of work for ICT is

"ICTs are the computing and communication facilities and features that variously support teaching, learning and a range of activities in education."

With the help of ICT, we enable to do self-learning with rapid pace through computer at any place, any time by we can able to be more productive and efficient. ICT makestransaction easierbetween teachers and students by making the students up to date and it also helps in enhancing teacher's capacityand ability.Result of the research that carried out by the global level shows that ICT have a positive effect an improved student learning and better teaching methods. A report made by the National Institute of Multimedia Education in Japan, proved that an increase in the use of ICT in education with integrating technology to the curriculum has a significant and positive impact on students' achievements.

In today's fast-moving world "information" is available in very huge amount & immediate basis. The main problem is handing important and useful information. To evaluate that which information is more valuable for us is more important task. This task could possible only with the help of ICT only. ICT play very significant role in every field i.e., politics, economy, education, and leisure. Very huge information produced in our modernsociety every day that's why we elicit its name as the knowledge-based society. Usefulness of ICT in each and every make it more important so that it is also known as digital society or the information. Now a day mobile learning is one of another form of E-learning becoming the rising trend of education specially for that places where physical constraints of the classrooms and acquired mobility. Students can access information anytime and everywhere they want, and those institutions that provides latest advanced digital technological terrains is rising in number day by day.

[1][2]he concepts of knowledge-based society show that origins and development thereof stem from technological innovation and advancement that are closely linked withInformation Communication Technology in the fields of educational planning and training as well as in organizations (knowledge& skill management) and work (knowledge work) ([2]

Our modern education trend i.e., inclusion of ICT in recent education system directly changed the way of interaction with user, communication with them, way of teaching, investigation about problem[3]Thus, introduction of technology in education system emerges various opportunities, appreciate the potential

to innovation in recent education trend, and results are automatic developed by scientific way and seek to address such socio-educational problem.

ICT in this paper refers to the applications found on most desktop computers, digital cameras, recorders, etc. that can be used to enhance curriculum in the classroom. Lafferriere stated that "ICT in schools and classrooms tends to attract school learner's interest and motivation" [4]

[5] in their international study found that many countries experienced that, despite major investments, ICT implementation in education proceeded slower than expected. Although a rapid improvement in computer-per-student was observed, it appeared that the use of computers in subjects, except for computer literacy and computer science courses, was still marginal. (One of the) major problems is that the educational software is often isolated and not integrated with the textbooks that many teachers use [6]; [7]

[8] argued that integration of technology into education could meet the needs of the Millennials as the generation currently attending universities; they further said that technology should not drive instruction, but should rather be integrated into the curriculum as technology is not a substitute for good instruction, [9] explains that technology does not look back, but promises better future. He further said that with technology we can do better whatever we want to do is a bluff as it creates the impression that there is almost nothing that is not possible with technology, [10] found that theology took up the challenge to utilize the printing press and should do the same with the new technology. The impact of theology is directly related to the medium used throughout the ages, [11] research indicated that the effectiveness of flexible conversational agent in productive online peer dialogue, [12] from his study found that how teacher integrate web-based technologies and their perceptions of cloud pedagogy. He found that cloud pedagogy framework facilitates individual and collaborative, synchronous and asynchronous active learning, in class and outdoor, U.S department of Education (2017) in their report said that presence of technology does not ensure equity and accessibility in learning; it has the power to lower to both in ways previously impossible. No matter perceived abilities or geographic locations, all learners can access resources, experiences, planning tools, and information that can set them on a path to acquiring expertise unimaginable a generation ago, [13]in their report presented in Norwegian Higher Education, that higher education institutions are not fully exploiting the possibilities inherent in digital technology. They found that 76 percent of the students reported that digital tools provide flexibility and freedom and are important for their studies, but these tools are infrequently or not used. [14] signifies that academic leadership has become larger and more central for the development of qualities of higher education in the country, university need to consciously and explicitly managing the process associated with the creation of academic leadership with their knowledge assets and to recognize the value of their intellectual capital to their continuing role in the society and in a wider global marketplace for higher education.

2. INTEGRATION OF ICT AND EDUCATION

2.1 Quantitative goals of ICT's Implementation in Education:

1. Improved learning outcomes.
2. This will help students to adjust to the inevitable future changes.
3. ICT is to help students to become competent and confident
4. Facilitating the training of faculties
5. Improving the administration of institutions to enhance the quality and efficiency of service delivery.

2.2 Importance of ICT in Higher Education:

1. For providing various kind of education courses and program
2. For providing equal education and equal opportunity for all.
3. For make a system which can collect and circulate all education related information.
4. For spreading awareness about technology in society.

2.3 Role of ICT as a Change Agent in Learning Process

Change in The Way of Learning

Enabling ICT in education, and making use of technology in education creates an easy-to-manage learning environment where the delivery of information is so much smoother and the learning easier. Undoubtedly, ICTs are the absolute reasonthat make teacher centered learning to competency-based learning or student-centered learning. Universities has also played a significant role in implementing ICT in education system. Old way of teaching through memorization and recitation techniques. Inclusion of ICT in education changed the way of leaning ICT enables us to promote transformation of education from teacher centered learning to students centered learning. e.g., 1) Continuously Increasing use of web network as educational source. 2) Internet users can select the experts by their own willingness from whom they learn. 3) Process will become problem based learning. 4) The rapid increase of capability, competency and outcomes oriented curricular. ICTs in education play's role of a change agent. It supports independent learning. Students become immersed in the learning process by using ICT.

The emergence of ICTs as a learning technology unknowingly insists to think on alternative theories for learning. The conventional teaching process has focused on teachers planning and leading students through a series of in structural sequences to achieve desired outcome. This way of teaching follows the planned transmission of knowledge though some

interaction with the content as a means to consolidate the knowledge acquisition. It depends on the process of personal understanding. In this domain learning is viewed as the construction of meaning rather than memorization of facts. Use of ICTs provide many opportunities through their provision and support for resource based, student centered learning. It acts to support various aspects of knowledge construction and as more and more stud. Employ ICTs in their learning process, the more pronounced impact of this will become.

The Impact of ICT on place 'When' & 'Where' to learn

In the past, there was no or little choice for students in terms of method & manner in which programs have been delivered. Students typically being forced to accept what has been delivered. ICT applications provide many options & choices in the same case.

- **Any place learning:** The use of ICT in recent education system has extended the scope of offering programs at a distance. The off-campus delivery was an option for students who were unable to attend the campuses. Today, many students are able to make this choice through technology – facilitated learning settings.
- **Any time learning:** In case of location issue, time problem, ICT provides us flexibility in time and place related constraint. It is the good opportunity for study. It enables us to gain knowledge anywhere, anytime & any place. By using ICT in education system, we have to just choose that which time we want to study and which time we want to others work. ICT has changed the future of education.

A Look at the Future of ICT in Education

The use of ICT in education has increasingly become an essential element of the educational environment. Accompanied by technological tools, use of ICT in education is to become an increasingly ever-present reality in society, hence expansion to embrace students, teachers and educational institutions will result in optimization of the teaching-learning process. Undoubtedly, an analysis of different views in the education sector shows the importance and growing perspective of technology, which would advance social and collaborative learning, with a dimension capable of fostering the liaison between current societies and an education that is both transformative and adaptable.

According to Tapia Y Leon (2013), integration of ICT in education must be accompanied by a series of guidelines defining a framework for decision-making regarding the actions to be taken during the process. It identifies three dimensions: (1) Information related to access to, shaping and transformation of new knowledge and digital environment information; (2) Communication, connected with collaboration, teamwork and technological adaptability; (3) Ethics and Social Impact, linked to the competencies needed to face the ethical challenges of globalization and the rise of ICTs.

3. CONCLUSION

The role of ICTs in the education is recurring and unavoidable. Rapid changes in the technologies are indicating that the role of ICT in future will grow tremendously in the education.

1. By observing current activities and practices in the education, we can say the development of ICTs within education has strongly affected on
    - What is gained?
    - How is gained by using which tools?
    - At what time &at which place learning is done?
    - Identification of learner and teacher.
2. ICT also focuses modification of the role of teachers. In addition to classroom teaching, they will have other skills and responsibilities. Teachers will act as virtual guides for students who use electronic media.
3. Ultimately, the use of ICT will enhance the learning experiences of students. Also, it helps them to think independently and communicate creatively. It also helps students for building successful careers and lives, in an increasingly technological world.

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The Impact of Information Technology on Human Resource Practices and Competencies

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Abstract: ***These days, HR is not taken care of as a single function. It's a gathering of highly expertise capabilities - each with distinctive objectives, tasks and requirements. There is growing pressure on Human Resource (HR) function to hold up tactical goals and to centre on value adding actions. Organizations have understood the growing significance of using information technology (IT) in leveraging their Human Resource (HR) functions. This takes the shape of e-HRM (Electronic Human Resource Management). The e-HRM revolution relies on cutting edge information technology, ranging from Internet-enabled Human Resources Information Systems (HRIS) to commercial intranets and portals. The dynamic forces are escalating competition, need to administer workforce on an international level, to get better HR service delivery and to carry cost savings. Information Technology (IT) as a structural facet and device converts architect of organizations, business processes and communication, and is increasingly incorporated into human resource management (HRM). While IT has impacts on human resource (HR), at the same time supervisors, workforce, clients and traders enlarge their expectations for HR functions. The value of knowledge and human capital make additional control on HR tasks and latest abilities for HR professionals are expected. In this study, the impacts of information technology (IT) on human resource practices and capabilities of HR professionals are studied.***

Keywords: ***Human Resource (HR), Recruitment, Electronic Human Resource Management (e-HRM), Human Resource Information System (HRIS) and Information Technology***

1. INTRODUCTION

Information technology is anticipated to develop the performance of Human Resource Management (HRM) by changing its focal point from administration or personnel management to planned HRM. The strategic task of HRM is believed to include value to the HR function and directs the spirit of HR function to transform. HR professional is affecting from functional level to strategic and administrative levels. Line managers have taken an significant part of HR function. Secondly, HR function conversion is a business procedure that changes the HR tasks and increase the participation of actors in HR function, and that makes HRM focus more on strategic, value-creating activities for the long-term business goals. Thirdly, HRIT is taking sides and forcing the conventional HR function to transform, and changes the way of administration. However, HR professionals necessitate to pay concentration to deal with the disadvantages brought by HRIT, which might leads harmful result on both social interface and information accuracy. In the second part, the investigation of empirical confirmation offers insight into the exercise role of HRIT in HR transformation. The observed confirmation shows that the transfer and decentralization of HR function is leading to role disagreement between HR professionals and line managers, and the HR professionals do not always focus on strategic subject but still put consideration to daily executive and operational tasks. On the other hand, the HRIT is considered as essential parts on supporting HR function transformation. It is because HRIT offers the proposal and chance for HR function transformation and shifts the traditional HR function to technology-based new function.

2. LITERATURE REVIEW

Watson Wyatt (2000) has carried out a survey that 79% of companies surveyed chose the company intranet as their primary method of delivering HR related services to employees, with the Internet coming in a close second at 70%. This represented a huge increase from the 50% of companies using the Web just two years ago. Results of this survey found to be focused on improving HR service and communication with employees. Satisfaction with these technologies was quite high, with 80% reporting the intranet method as being moderately to very effective and 69% reporting the same for their use of the Internet.

DeFillippi (2002) observed that technology have an effect on HRM to a greater level because of high degree of interaction between technology and HR. Technology changes the way we work, the roles we take on and the dealings through which work gets done.

Garavan et al. (2008) suggested that technology lies at the heart of mechanized industry. It presents a sequence of business benefits. Technological improvements adjust the perspective of HR practices and the way they are applied.

Saxena and Tiwari (2009) examined the HRM Practices implemented by leading IT companies such as TATA, Infosys and Wipro in India. They expanded the 3cTER structure of

HRM practices and recognized training and development, employer-employee relations, identification through rewards, culture building, career development, compensation and benefits as imperative HRM practices.

Hunter Group suggested that e-benefits and self-services are modernizing HR by getting better their capability to offer and communicate information to their employees. If the speed of enlargement maintains as it has for the past three years it will quickly become as ever-present as the web itself.

Human Resource Information System (HRIS)

HRM generally uses IT as HRIS. HRIS is an incorporated system obtaining and storing data used to make investigation, make decisions in the field of HR. A modern HRIS is a dynamic data base about employees' performance and demographic information. HRIS offers information about employees' data, employment, application necessity, job characteristics, selection and staffing, procedures of employment, group structure, skilled and individual development, education costs, performance appraisal, personnel planning, organizing etc. And these data are used for many purposes simple or complex.

Electronic Human Resource Management (eHRM)

E-HRM is an IT relevance for supporting or connecting at least two people or collective performers in contributing HR actions. Today, HRIS is available for users through internet (www. comparehris.com/HRIS-overview/). In other word, eHR (M) is a HRIS which HR personnel, executives and other employees access via internet or intranet.

3. BENEFITS OF INFORMATION TECHNOLOGY

Technology has an effect on organizations and work relations in associations by allowing to access information and to join people electronically. With new procedures and providing some advantages HRIS changes traditional HR processes and it is anticipated that HRIS will give functionality for realization of units' objectives and goals.

- **Cost Reduction:** Effects of IT on HR costs appear in several ways. First, IT reduces costs of processes and works. For example, transforming from traditional HR to e-HR reduces costs of some HR applications, such as, postal cost, announcement cost and data processing cost. Using self service technology reduces the processing costs of HR up to 75%. E-selections and e-recruiting decrease costs of staffing and selections due to reduced employee turnover, reduced staffing costs, and increased hiring efficiency. Second, using self service HR allows employees to perform their own work themselves directly. Thus, HR professionals spend less time on routine tasks.
- **Economy in Time:** IT allows HR professionals to spent less time on routine tasks and make easier to acquire and analyze information. For example, researches show that recruiting process shortens twelve days.
- **Increase in Effectiveness:** Intense use of IT aromatizes and standardizes routines. HR professionals may spotlight less on managerial activities and more on understanding information. HR professionals may spend more time on other features of their jobs. Thus, HR professional can access more information, act in response to the problems in a timely main from managers and workforce and assess the complex information more efficiently. Comparing with manual processes, reducing data errors, shortening and fastening processes of HR practices make HRIS more advantageous.
- **Facilitating Communication and Collaboration:** IT is a tool for effective communication and collaboration. E-mail, messaging, discussion lists, videoconferencing, virtual teams, electronic workgroups, and teleworking have changed the nature of workplace communication and collaboration. These make workplace interactions possible for employees even they are not physically present in the workplace. IT improves the skills of workers for collaborating, accessing information and decision making. Participative decision making becomes an organization-wide activity. Internet and web based technologies facilitate sharing of decision making responsibility through the organization hierarchy and structure. HRIS as an integrated system also increases the capacity of reporting in the organization.
- **Capability Management:** IT tools facilitate HR professionals both to arrive at larger candidate pool and make choice more objective and valuable to occupy more pertinent and experienced candidates by means of decision making techniques in the selection and recruiting process. Getting better and decreasing the recruiting procedure increases capabilities of incumbents and as a result excellence of works. At the same time, because of distance access e-HR can be used to build up human capital of the organization efficiently.
- **Knowledge Management:** Knowledge management is a systematic process of obtaining, creating, detaining, producing, learning, and by means of information, insights, and practices to increase decision making. Knowledge management system is a natural extension of HRIS and HR development activities. HR professionals should put together conventional HR functions into knowledge management. Because organizations should acquire and manage organizational knowledge to prevent knowledge looses when employees leave the job. Using IT tools such as intranet, virtual collaborations, data storage and data mining can get better skills for facts attainment and distributions. Knowledge Management tools also make easy knowledge contribution and empower the specific task areas. IT assists HR professionals to access and disseminate information more efficiently.
- **Structuring Tactical HR:** Strategic role of HR centres on lining up HR activities with HR strategies. So, HR should

work with executives and line managers in associations. IT is accepted as an imperative impetus for strategic HR. IT constructs stronger HR units and permits HR to connect in more important strategic roles. IT solutions free HR from the burden of routine administrative tasks. If HR professionals rely on IT, they hold a more planned role. Because they will have time to understand information, build up strategies and think about corporal transformation.

4. INNOVATIVE PRACTICES OF INFORMATION TECHNOLOGY

Adjustment of IT in HR functions has created new HR procedures. These functions are virtual recruitment, e-learning, self service HR and portal technologies and new types of working.

- **E-Learning:** e-training, e-learning or web footed training is a increasing HR application. IT tools can be used for formal and informal education activities. e-mail, mail lists, dash boards, message systems, web pages, online courses and media applications are some of BT tools which support learning in workplace.
- **Virtual Recruitment:** Web based recruitment; virtual interview, CV searching, online psychosomatic test and online job announcements have transformed and fastened the recruitment process. These applications also disconnected the potential impediments to reach larger candidate pool.
- **Self Service HR and portal applications:** Employees can execute some of their own HR activities by means of making contact with HRIS. This is called self service HR. Self service applications can include 60 percent of all HR activities. Employees who use self-services can simply bring up to date and confirm personal information, have information about surrounded by job vacancies, access corporate handbooks and obtain notices about training programs. Managers can analyze candidate profiles, generate salary models, view advantages programs and examine absentee trends. Moreover, performance assessment and career progression can be managed. This also increases supposed fineness of supplied HR services. HR portals are complex information technology tools. HR portals give the possibility for each individual user to systematize or customize his or her own portal according to his or her own job responsibility or preferences.
- **New Types of Working:** Progress in information and communication technologies crafted some new forms of working such as teleworking and project based works. Teleworking as method changes the established geography of work. That means "moving the work to workers in its place of moving the workers to work". By means of IT tools are capable collection of people with alike significance and conflicting skills, and their assistance in short or long-term projects are probable. Teleworking presents significant advantages: higher competence, lower absenteeism, more achievement and lower turnover rate.

5. REQUISTIES HUMAN RESOURCE COMPETENCIES FOR INFORMATION TECHNOLOGY

Competencies are defined as an individual's established knowledge, skills or capabilitis. Competencies are personal characteristics about people; who they are, what they identify and what they do, or personal characteristics cause superior performance. Dynamic trends in the outer business environment that businesses face and nature of HR demand that HR professional build up new capabilities and competencies. In this context growth of technologies in work place, internet and web based IT has very significant impact on HR professionals and influences their functions and activities. To react new role expectations HR professionals must learn and develop innovative skills.

- **Technical Capabilities:** Computer literacy became a requirement job skill in HR. Organizations want HR professional to maintain up with development in HRIS and to successfully apply and administer HR information technology. So HR professionals must to learn new skills in areas of IT that they do not already have. These are necessities to confront in the dynamic and cut-throat environment. HR professionals use IT for obtaining data and must have competencies to change these data into tactically valuable knowledge. HR professional should establish technology needs, mange technology supplier and mobilize technology to assess and hold up HR functions. HR professional should not relay on IT departments to purchase technologies. Because, IT experts may centre on technology design and application rather than business success. Leveraging technology HR professional should use web based/e-HR to add value efficiently to organizations.
- **Business Acquaintance:** e-HR takes part as an important role for HR professionals to centre on strategic partnership (Bell et al. 2003). Some HR professional can be ineffective to adopt technology to business although they know HR technology. So in order to be significant player in organizations and add value for organizations HR professionals must recognize the business, industry and business strategies. They must to know about supply chain management, finance, marketing, manufacturing, logistic, customers, competitors, financial markets and globalization. The capabilities of HR professionals in business do not necessitate the ability to do all the business functions, but the ability of understanding businesses.
- **Change Management:** Adaptation of new IT in firms changes corporal schedules, business procedures and business habits. If HR professionals have the capabilities of change management they can assist organization members to administer change and add value to their association. For

example, HR professionals must manage cultural change to hold up self service HR structure in the organizations.

6. EVALUATION

Beside IT is an important instrument for realizations of HR functions, widely use of IT in the HR functions affects HR management in many aspects.

- **Traditional HR functions:** Use of IT within the HR functions enhances effectiveness and competence of HR practices, reduces time and costs. Moreover, IT makes easy allocations of information along the organizational hierarchy, it allows organizational decision making and knowledge management.
- **New HR process:** Self service HR, e-learning and e-recruiting are new procedures. These are probable only with IT tools. These new processes concerning effectiveness, efficiency and cost create more value than traditional HR processes do for the association.
- **New types of working:** Extensively use of IT in the business generates new types of works such as teleworking and web based project contracts.
- **Strategic impact:** IT is a very significant power for the transformation of HR functions. IT reduce transactional burden on the HR functions. So HR professionals dedicate more time for the tactical issues to be a strategic partner.
- **New competencies:** Transforming HR management from managerial functions to planned focus defines new competencies of successful HR professionals. These competencies are business awareness, change management and technological competencies. HR professionals can be unsuccessful in adaptation of IT in business even though they know about technology. In order to be vital player in an association and to generate value for the organization HR professionals need to know about business and its surroundings. Adaptation of IT also changes the routines, business procedures and work habits. So HR professionals require to have the competencies of change management. HR mangers need also new competencies on IT and more knowledge on facilities of IT before they had in the past. As a result, applications of IT in the HR functions both affect HR practices and make HR professionals develop new competencies.

7. CONCLUSION

Effectual HR management can give a company a competitive benefit by helping make the best use of employee's skills. The incorporated solutions offered by E-HR have the possible to diminish data entry, diminish errors, and cut down the time required to preserve the overall HR infrastructure. The need to add and keep current skills updated with use of information technology. HR professionals are often the architects of workplace policies and practices governing the employment procedure. HR professionals, working with supervisors, often play a significant role in responding to requests for workplace accommodations for employees. Few human resource professionals or their employers completely comprehend the possible discriminatory impact of these E-HR applications, or are equipped to proactively get rid of this unnecessary barrier to the workplace and the employment procedure. Significant education is needed to raise consciousness of these issues, with employers, human resource professionals and the information technology professionals that are the architects of these internet employment process functions. Education and training via the internet and distance learning program offer easier way to skill expansion for people with disabilities, but only if they have the basic skills to use computer equipment. They need to know about vocational options and labor market demands. They need to be enthused, in part by the accessibility of jobs, to take part in educational efforts and at last they need to have the access to computers. Therefore, education about use of information technology becomes even more essential for employees. Educational institutions can help by recognizing and documenting any exceptional needs of students with disabilities in accessing IT technology in the educational situation. They can also recognize and put into practice strategies to meet these needs for successful full contribution in this learning procedure. Governmental bodies can help by stimulating partnerships (training, internships, mentoring) between educational institutions and private sector employers to support the kind of education needed to properly equip employees with IT labour force. Thus in this view significant steps should be taken for in this procedure.

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OTT: The Emerging Source of Digital Entertainment

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Abstract: OTT (Over the Top) media administrations that offer direct real-time features to watchers have been acquiring notoriety around the world. A portion of the leaders of such administrations is Netflix and Amazon Prime, which stay famous around the world. Be that as it may, the situation is very extraordinary with regards to the Indian OTT industry. As per a report delivered by Counterpoint Research in April 2018, the Indian streaming stage Hotstar is the most famous OTT stage in India. Hotstar is firmly trailed by Amazon's Prime Video and SonyLIV, while Netflix positions fourth. The achievement of Netflix's Sacred Games and Ghoul, Prime Video's The Family Man, and Hotstar's AIB On Air and Sarabhai Vs Sarabhai demonstrated unique arrangement are a working equation. With Indian crowds searching for good unique substance, the stages are exploiting to build their income.

Keywords: OTT, Netflix, Amazon Prime, Zee5, Voot, Alt Balaji

1. INTRODUCTION

Generally, the utilization of films and other sound and video content has consistently been as mediums like theater and TV. As the innovation was created, it was effectively available at home and at whatever point needed with the presentation of VHS, DVDs, Blu-beams, and circle rental administrations. Further, satellite TV brought the substance through Coaxial links and fiber optic links. Another better help arose as Direct-to-home (DTH) innovation through satellite and dish availability that brought excellent transmission and on-request content straightforwardly to the shopper. As of late, innovative progressions have made the film or TV observing more advantageous through web-based real-time or Video on Demand (VoD) administrations [1]. VoD alludes to real-time video content over the Internet, through applications commonly alluded to as Over-The-Top (OTT). Watchers can get to video content through OTT applications in any Internet-associated gadget like a Smartphone, keen TV, tablet, PC, PC, and so on Not at all like conventional media, real-time features recount shifted stories that are not limited by edits, film industry or segment. It gives a review insight with enormously improved sound and visual quality, given the buyers have a steady Internet. [1] The absurd (OTT) stage saw a tremendous blast, and it turned into a significant wellspring of diversion for watchers. In India, Arre, Disney+ Hotstar, Eros Now, BigFlix, Hooq, Netflix, Hungama Play, and some 30-odd stages have mushroomed and are being watched by greater part family units. A new report in a public day by day noticed that there are right now around 40 suppliers of OTT administrations, which convey real-time media over the web [2]. There is no uncertainty that OTT has disturbed the diversion area. It has made watching films advantageous and convenient. Anyone with a cell phone and a web association can watch a film, settling down anyplace on the planet. Not all families have PCs and PCs for every part; the pandemic has limited developments of individuals, making public activity troublesome [3].

2. FACTORS INFLUENCING THE RISE IN POPULARITY OF STREAMING SERVICES

a. **The growing incursion of broadband:** This has assumed a vital part in quickening the development of the OTT video portion around the world. Corona virus, particularly, has caused governments to understand the estimation of quick availability and its relevance being used cases, for example, progressed telemedicine and distant working, and this has played through enlarged and augmented reality. It appears to be that 5G can control portable innovation through the expanded versatile selection and extended fast broadband web access employing fixed remote access (FWA). In this manner, governments everywhere in the world are putting resources into high-velocity broadband to intensify broadband inclusion and selection. These activities have been assuming an essential part in the accomplishment of OTT recordings.

b. **Reachable speedy smart phones:** By essentially interfacing their brilliant gadgets with the bought in OTT administrations, watchers access content whenever, anyplace, and on their gadget of decision. This is additionally helped by the way that portable organization administrators (MNOs), especially in arising nations in the APAC and the MENA areas, have quickened the rollout of versatile broadband, making MNO associations and planning of reasonable bundles. Clients have begun accessing significantly more substance on their cell phones. Accordingly, the versatile channel is rapidly arising as the most favored video conveyance stage just as the dominating assistance dissemination channel for quickened development.

c. Innovations in media streaming know-how: OTT video was resulting from accommodation in watching programs at some random time. Individuals would not like to be secured to explicit occasions to see the content. All things considered, they needed to see content whenever, any spot, and on any gadget. This is the fundamental purpose behind the ascent of OTT stages. Innovation has assumed an urgent part in the proliferation of OTT video administrations. Free highlights, for example, web-based features being cloud-based, backing to live-content with video-on-request (VOD), a huge substance store, zero buffering, and versatile bitrate streaming requiring a couple of moments.

d. Modified OTT apps: Localisation of substance, an extent of decisions concerning the type, titles, personalization, and adaptability of review on any gadget at any spot and whenever has given a consistent encounter to watchers. From an OTT administration supplier viewpoint, such profound shopper experiences gathered from OTT applications cause them to tailor their contributions by settling on information-driven choices.

e. Novel pricing models: Amazon Prime Video is perhaps the most reasonable OTT stage in India. The assistance is evaluated at Rs 999 every year and at Rs 129 every month. Under these plans, the organization offers clients admittance to 4K substance, limitless downloads, and admittance to an immense library of substances. Creative estimating strategies received by a few OTT players have pulled in and hold clients.

3. STRAIGHT FROM THE HORSE'S MOUTH

a. ***Archana Anand, Chief Business Officer, ZEE5 Global***

Two key subjects swung into noticeable quality in 2020 arising as key drivers of the OTT business' soaring development in 2021. With the lockdown, It's been seen a pattern of individuals across the globe getting used to paying for quality substance and being happy to focus on yearly membership packs where they see esteem. This pattern just quickening in 2021, prompting solid Subscription Video On Demand (SVOD) development. It very well may be said that 2021 will be the year that global substance comes into significantly more prominent noticeable quality as online crowds in a real sense find a universe of the new substance employing their OTT stages [4].

b. Hiren Gada, CEO, Shemaroo Entertainment Limited:

From direct-to-computerized deliveries to the expanding development in the local substance, this year has reinforced the developing fame of OTT to an untouched high. One pattern that is relied upon to become the overwhelming focus is profoundly confined and local substance. Understanding the profound established associations of watchers with their primary language, shemaroo has built up a solid local methodology across the entirety of its foundation. It has an immense substance bank that goes from Bollywood, Gujarati, Marathi, Punjabi, Kids, Devotional, and different particular plate [4].

c. Ferzad Palia, Head, Voot Select, Youth, Music and English Entertainment, Viacom18:

The year 2020 saw the OTT classification driven by weighty narrating and full-scale factors bringing about huge development for SVOD administrations. Watchers' ability to pay for quality substance is currently grounded. In any case, around 65% of supporters are still from the Top 10 metros. 2021 will resist this pattern and see the Premium OTT Category in India extend its impression outside of the best 10 metros, proclaiming the following period of development for the classification [4].

d. Karan Bedi, CEO - MX Player:

Video real-time has become the essential method of amusement for most computerized customers across India this year. With this scenery, India is set to turn into a critical market for development in OTT video in 2021. This will prompt a torrential slide of new remarkable unique substance for these crowds as they have next to no to watch on TV. In the present circumstance, advertisers are additionally progressively mindful of where their cash works best and might want to zero in on those mediums, in particular advanced and OTT [4].

e. Divya Dixit, SVP, Marketing, Analytics, and Direct Revenue, ALTBalaji

Advanced is an always developing medium and with regards to OTT players, rivalry across the business is taking off high with everybody at their toes attempting to make sure about their places in the personalities of purchasers. While the pandemic of 2020 reclassified content utilization, the year 2021 will outline new business partnerships and income models for stages to procure direct memberships. The report from FICCI and E&Y anticipated 30-35 million paying supporters on OTT stages alone in the year 2021, and we are amped up for cutting a significant pie out of the equivalent [4].

f. Aparna Purohit, Head, Prime Video India:

2020 has been a very exciting year for Prime Video India – at a time when a large section of customers, looking for high-quality entertainment, are turning to stream video – They launched 18 direct-to-digital movies (across 5 Indian languages) and 8 Indian Amazon Original Series, in addition to several Global Originals and hundreds of licensed and exclusive titles. One of the most consistent trends is observed in 2020 is that great content transcends geographical barriers. Indian stories are traveling across the globe - 1 out of 5 viewers of Indian Originals are from outside India [4].

4. PROBLEMS

OTT has made new chances for dispersing substance to watchers in any market. On the opposite side, watchers have their own decision of picking the projects and the adaptability of when, how, and where to watch their number one substance. As OTT keeps on acquiring ubiquity, the IP advances fundamental the Internet should advance. It is, in any case, a major test because these innovations are not easy proportional. Along these lines, there are as yet numerous provokes that keep on enduring in this space which will additionally develop into more current chances in the coming years [5]

a. Bottleneck Checks

With the development in OTT viewership, web restrictions have started making bottlenecks. The business reacted by drawing content nearer to clients, which came to be known as the 'edge'. This elaborate the utilization of private substance appropriation organizations (CDNs). Another connected test was data transfer capacity gag focuses. Another improvement is the expansion of additionally buffering for forestalling parcel misfortune. at the point when this is done, new difficulties emerge that Buffering can build inactivity, which influences the nature of video conveyance administration Increasing port line rates implies the requirement for inner switch/switch transfer speed increments. The handling speed request additionally increments.

b. Need for More Power

OTT stages manage high-goal video information. This implies there is a requirement for more prominent handling power, particularly for pressure. This further method a requirement for more fiber limit, which can go from 10Gb to 100Gb. Furthermore, this further accompanies the interest for more energy. The requirement for more prominent force, energy, and fiber limit likewise provokes a higher interest for capacity limit.

c. Multicast Challenge

Another test OTT stages face is the requirement for ISPs to help certain exclusive multicast conventions. Another connected test is that multicasting requires either various forms of multicast streams for empowering DASH conventions or a one-size-fits-all methodology dependent on a solitary video rendition. There is one more test identified with the multicast conveyance. It is the requirement for a convention for the conveyance of the idea of program management across all gadgets. This is needed to give data on the particular video transfers allowed to each multicast address.

d. Content Challenge

It is additionally obvious that if these administrations can't make and give the substance wanted by watchers, they can't be effective in the long haul. Curiosity Stream and Drama fever were so fruitful with this arrangement that they caused the behemoth Netflix's piece of the pie to descend by an amazing half at a time. So what does specialty content mean? It is tied in with staying away from the snare of making nonexclusive substance. It includes giving something interesting and distinctive to watchers.

e. Content Discovery

Watchers at this point don't have the persistence to peruse many channels to discover something they may like watching. The cutting edge shopper needs to locate the necessary substance after perusing close to several pages. This makes it significant for OTT stages to upgrade their substance disclosure usefulness. Such applications ought to have the option to customize the watcher experience. A one of a kind viewpoint is that watchers will in general stay with the assistance that gives customized content recommendations, which is less complex to utilize and quicker to locate the substance of interest.

f. Meeting Demand

It is quite often hard to determine what substance can become a web sensation. On the off chance that and when a video content gets viral, OTT stages can wind up to be caught off guard for it. There is consistently the opportunity that a piece of substance can get a great many perspectives in a brief timeframe, now and again in a day or two. Administrations ought to have the size of arrangement to have the option to deal with such interest. This alludes to the workers and upheld data transmission, all set up to forestall any circumstance of accidents. The inability to stream the 2014 Academy Awards occasion live is perhaps the best illustration of such a disappointment.

g. Viewer Retention

It has been discovered that meddlesome special substance and low video quality are the significant reasons watchers move away from certain substances. So it is imperative to deliver these issues to build watcher maintenance. The OTT space keeps on getting swarmed. OTT administrations need to work more enthusiastically to make and convey content and follow arrangements that draw in new watchers as well as hold the current ones. This isn't just about conveying a more prominent substance, yet additionally about giving a superior by and large experience.

5. FUTURE SCOPE

Better network, less expensive gadgets, and significantly less expensive information plans have been supporting the development of India's ridiculous (OTT) industry in recent years. Notwithstanding, 2020 turned into a year when an

ever-increasing number of individuals went onto the computerized environment, on account of being stuck at home during the lockdown. With individuals scarcely moving out of their homes, they went to the advanced world for their everyday fix of diversion. On the off chance that an IBEF report is to be accepted, the OTT area in India saw a 30% ascent in the quantity of paid endorsers, from 22.2 million to 29.0 million between March and July 2020. There was an obvious expansion in the time individuals were spending on most stages. It subsequently got significant for stages to think of separated, new substance that would help them stand separated. Inferable from the way that multiplexes were closed for quite a long time, numerous stages additionally began dispatching motion pictures straightforwardly on advanced. Buyers have been glad generally. As we enter 2021, assumptions from the area are high.[4]

6. CONCLUSION

OTT is by all accounts the new option in contrast to watching films in theaters and numerous producers are reconsidering their dispersion systems for delivering movies and contacting a more extensive crowd in an issue freeway. During the pandemic, because of the wellbeing alarm, OTT acquired notoriety. Producers appear to be very content with the arrangement they are getting from video-real time stages. One enrollment is everything necessary for the whole family to watch a few movies, and that too inside the limits of their homes, saving them a great deal of time and cash.

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Convergence of IND as and IFRS: A Comparisonand Challenges for India

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Abstract: India as moving towards emerging global economy, the government of India has committed to convergence of accounting standards of India with IFRS (International Financial Reporting Standard). IFRS has become a global language in terms of Accounting from 2005 around the world, In India from April 2011. From during last decades, some countries either adopted IFRS or converged to IFRS, But India is decided to converge our standards with IFRS. In this paper presentation discussed the IFRS adoption procedure in India and the utility for India in adopting IFRS. This study discuss the problems faced by the stakeholders (Regulators, Accountants, Firms, Creditors etc) in the process of adoption of IFRS in India. Finally this study brings out the ways through which these problems can be reduced. Basically this paper is prepared on secondary data, which provides the information regarding Comparison of Indian Accounting Standards and International Financial Reporting Standards as well as their Challenges in India.

Key words: Indian Accounting Standards, International Financial Reporting Standard (IFRS), Indian GAAP.

1. INTRODUCTION

With globalization the behaviour of doing business changed across the world. The process of financial reporting of business activities also undergoes a great change. It started from 1973 when International Accounting Standards (IAS) has made it mandatory for Business who trade around the world. It is a set of International accounting and Reporting standards that help to harmonize company financial information, improves the transparency of accounting and ensures that stakeholders, investors, customers receives more accurate information and also ensure their suitability with their economic, political and social conditions and then adopt these IFRSs accurately or with minor changes.

India, in 2007 announced that it would fully adopting **IFRS** by 2011 which is to be done as:

- It include the companies which are part of Nifty 50 Index, Sensex 30, the companies which have shares or other securities listed on stock exchange outside India and the companies (whether listed or not).
- It should cover the Firms (listed or not) as per the MCA guidelines.

2. OBJECTIVES OF THIS STUDY

- To examine the IFRS implementation procedure in India,
- To examine adopting IFRS in India i.e., Advantages.
- To examine that, IFRS will improve the Standard of Accounting,
- To examine that, IFRS will improve the transparency of accounting to end users.

3. RESEARCH METHODOLOGY

This paper has been conducted mainly on the basis of literature survey and secondary Information. It had collected information through few journals, IFRS website, and ICAI and MCA websites have been referred to prepare this paper.

4. LITERATURE REVIEW

As mentioned, the available literature on IFRS and its convergence covers the data from European Union. Few studies have been carried out analyzing the data from other countries IFRS website.

- **Armstrong et al** (2010) found out a positive reaction to IFRS adoption events for firms with high quality pre adoption information, consistent with investors expecting net convergence benefits from IFRS adoption. In his study of 1084 European Union firms during the period of (1995-2006), **Cai & Wong** (2010) in their study of global capital markets summarized that the capital markets of the countries that have adopted, . **Chen et al** (2010) in their study of financial data of publicly listed companies in 15 member states of European Union (EU) before and after the full adoption of IFRS in 2005 found that the majority of Accounting Quality indicators improved after IFRS adoption in the EU. They found that there is less of managing earnings towards a target, a lower magnitude of absolute discretionary accruals and higher accruals quality. The study also showed that the improved accounting quality is attributable to IFRS, rather than changes in managerial incentives, institutional features of capital markets and general business environment.

- **Paananen & Lin** (2009) gave a contrary view to prior research that IFRS adoption ensures better quality of accounting information. Their analysis of German companies reporting showed that accounting information quality has worsened with the adoption of IFRS over time. They also suggested that this development is less likely to be driven by new adopters of IFRS but is driven by the changes of standards, **Lantto & Sahlstrom** (2009) in their study of key financial ratios of companies of Finland found that the adoption of IFRS changes the magnitude of the key accounting ratios. The study also showed that the adoption of Fair Value Accounting rules and stricter requirements on certain Accounting issues are the reasons for the changes observed in Accounting Figures and financial ratios.**Epstein** (2009) in his article on Economic Effects of IFRS adoption emphasized on the fact that universal financial reporting standards will increase market liquidity, decrease transaction costs for investors, lower cost of capital and facilitate international capital formation and flows.
- **Barth et al** (2008) in their study of financial data of firms from 21 countries examined whether application of IAS/IFRS is associated with higher accounting quality. The findings of the study confirmed that firms applying IAS/IFRS evidence less earnings management, more timely loss recognition and more relevance of accounting numbers. The study also found out that the Firms applying IAS/IFRS experienced an improvement in accounting quality between the pre-adoption and post adoption period.
- **Chand & White** (2007) in their paper on convergence of Domestic Accounting Standards and IFRS, demonstrated that the influence of Multinational Enterprises and large international accounting firms can lead to transfer of economic resources in their favour, wherein the public interests are usually ignored. **Callao et al** (2007) on financial data of Spanish firms revealed that local comparability is adversely affected if both IFRS and local Accounting Standards are applied in the same country at the same time. The study, therefore calls for an urgent convergence of local Accounting Standards with that of IFRS.

5. INTERNATIONAL FINANCIAL REPORTING STANDARD (IFRS)

The International Accounting Standards Board

IFRS Standards are developed by the Board, which is the standard-setting body of the IFRS Foundation, an independent, private sector, not-for-profit organisation. The Board was formed in 2001 as the successor organisation to the International Accounting Standards Committee (IASC), which had been setting International Accounting Standards (IAS Standards) since 1973. Both bodies have been London-based since their inception, but they have a global mission. The Board is committed to developing, in the public interest, a single set of high quality global accounting standards that provide investors, lenders and others with relevant, transparent and comparable information in general-purpose financial statements.

The vision in 2000: a single set of global accounting standards

The vision or fundamental objective of the Board and the IFRS Foundation is To develop, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent and comparable information in financial statements and other financial reporting to help participants in the world's capital markets and other users make economic decisions.

6. IFRS ADOPTION IN INDIA: IND AS

Presently, the Institute of Chartered Accountants of India (ICAI) has issued 39 Indian Accounting Standards (Ind AS) which have been notified under the Companies (Indian Accounting Standards) Rules, 2015 ('Ind AS Rules'), of the Companies Act, 2013.

Applicability of Ind ASas per the notification released by the Ministry of Corporate

Affairs (MCA) on 16 February 2015, the roadmap for Ind AS implementation is as follows:

2016-17 Companies (listed and unlisted) whose net worth is equal to or greater than 500 crore INR, 2017-18 Unlisted companies whose net worth is equal to or greater than 250 crore INR and all listed companies.

Adoption means using IFRS as issued by IASB, Convergence means that the countries accounting standard board and IFRS would continue working together to develop quality and compatible accounting standards.

COMPARISON WITH IND-AS *verses*IFRS

Indian accounting standard			IFRS	
AS No.	**Name of Standard**		**IAS/ IFRS no**	**Name of Standard**
Ind AS 1	Presentation of Financial Statements		IAS 1	Presentation of Financial Statements
Ind AS 2	Inventories		IAS2	Inventories
Ind AS 7	Statement of Cash Flows		IAS 7	Statement of Cash Flows

Indian accounting standard			IFRS	
AS No.	**Name of Standard**		**IAS/ IFRS no**	**Name of Standard**
Ind AS 8	Accounting Policies, Changes in Accounting Estimates and Errors		IAS 8	Accounting Policies, Changes in Accounting Estimates and Errors
Ind AS 10	Events after the Reporting Period		IAS 10	Events after the Reporting Period
Ind AS 11	Construction Contracts		IAS 11	Construction Contracts
Ind AS 12	Income Taxes		IAS 12	Income Taxes
Ind AS 16	Property, Plant and Equipment		IAS 16	Property, Plant and Equipment
Ind AS 17	Leases		IAS 17	Leases
Ind AS 18	Revenue		IAS 18	Revenue
Ind AS 19	Employee Benefits		IAS 19	Employee Benefits
Ind AS 20	Accounting for Government Grants and Disclosure of Government Assistance		IAS 20	Accounting for Government Grants and Disclosure of Government Assistance
Ind AS 21	The Effects of Changes in Foreign Exchange Rates		IAS 21	The Effects of Changes in Foreign Exchange Rates
Ind AS 23	Borrowing Costs		IAS 23	Borrowing Costs
Ind AS 24	Related Party Disclosures		IAS 24	Related Party Disclosures
Ind AS 26	Accounting and Reporting by Retirement Benefit Plans		IAS 26	Accounting and Reporting by Retirement Benefit Plans
Ind AS 27	Separate Financial Statements		IAS 27	Separate Financial Statements
Ind AS 28	Investments in Associates and Joint Ventures		IAS 28	Investments in Associates and Joint Ventures
Ind AS 29	Financial Reporting in Hyperinflationary Economies		IAS 29	Financial Reporting in Hyperinflationary Economies
Ind AS 32	Financial Instruments: Presentation		IAS 32	Financial Instruments: Presentation
Ind AS 33	Earnings per Share		IAS 33	Earnings per Share
Ind AS 34	Interim Financial Reporting		IAS 34	Interim Financial Reporting
Ind AS 36	Impairment of Assets		IAS 36	Impairment of Assets
Ind AS 37	Provisions, Contingent Liabilities and Contingent Assets		IAS 37	Provisions, Contingent Liabilities and Contingent Assets
Ind AS 38	Intangible Assets		IAS 38	Intangible Assets
Ind AS 39	Financial Instruments: Recognition and Measurement		IAS 39	Financial Instruments: Recognition and Measurement
Ind AS 40	Investment Property		IAS 40	Investment Property
Ind AS 41	Agriculture		IAS 41	Agriculture
Ind AS 101	First-time Adoption of Indian accounting Standards		IFRS 1	First-time Adoption of International financial reporting Standards
Ind AS 102	Share-based Payment		IFRS 2	Share-based Payment
Ind AS 103	Business Combinations		IFRS 3	Business Combinations
Ind AS 104	Insurance Contracts		IFRS 4	Insurance Contracts
Ind AS 105	Non-current Assets Held for Sale and Discontinued Operations		IFRS 5	Non-current Assets Held for Sale and Discontinued Operations
Ind AS 106	Exploration for and Evaluation of Mineral Resources		IFRS 6	Exploration for and Evaluation of Mineral Resources
Ind AS 107	Financial Instruments: Disclosures		IFRS 7	Financial Instruments: Disclosures
Ind AS 108	Operating Segments		IFRS 8	Operating Segments
Ind AS 109	Financial Instruments		IFRS 9	Financial Instruments

Indian accounting standard			IFRS	
AS No.	**Name of Standard**		**IAS/ IFRS no**	**Name of Standard**
Ind AS 110	Consolidated Financial Statements		IFRS 10	Consolidated Financial Statements
Ind AS 111	Joint Arrangements		IFRS 11	Joint Arrangements
Ind AS 112	Disclosure of Interests in Other Entities		IFRS 12	Disclosure of Interests in Other Entities
Ind AS 113	Fair Value Measurement		IFRS 13	Fair Value Measurement
Ind AS 114	Regulatory Deferral Accounts		IFRS 14	Regulatory Deferral Accounts
Ind AS 115	Revenue from Contracts with Customers		IFRS 15	Revenue from Contracts with Customers
			IFRS 16	Leases

7. ADVANTAGES FOR INDIA IN CONVERGENCE WITH IFRS

1. **To Economy:**The convergence benefits to the economy by increasing its growth in international business and also helps in increase in capital formation and maintenance of capital market. International investing leads to more capital flows into the country.
2. **To Investors:** The investor wants more relevant and reliable information for better understanding of financial reports. Convergence with IFRS will contributes to investors understanding and confidence in high quality financial reports.
3. **To Industry:** The large business houses of India like TATA, INFOSYS, WIPRO etc, should prepare the different reports for different countries. This ensures the elimination of multiple financial reporting standards by these firms as they are following single set of Financial Reporting.

8. PROBLEMS AND CHALLENGES

1. **Training of concept:** Lack of training facilities about these courses, in India does not have a professional's trainer or trained person to carry the task.
2. **Law and Regulation:** IFRS is principle based law, in India the accounting practice is governed by ICAI, MCA, Indian GAAP, SEBI etc. it will create challenges for India to adopt the IFRS.
3. **Fair value measurement:** IFRS uses fair value measure in most of the transaction, which results in gain or loss reflects in financial performance statement and valuation in financial position.
4. **Taxation:** At present scenario Indian tax system as modified as GST (all indirect taxes), it will affect on financial statement but also to tax recognize. Tax system is a challenge to Indian market.
5. **Reporting System:** The Indian firms as amended to requirementsof use suitable
accounting standards (Ind AS) for existing business reporting.

9. CONCLUSION

IFRS adoption in India is certainty. Government of India and ICAI, MCA are taking to improve smooth transition process step that is to converge our standards with IFRS. As recommending, Awareness and proper Training should contribute to this process, and seminars, workshops facilities should provide to educate employees and students as well as user of these accounting standards. Proper instance guidance on accounting practice stood is taken.With all this measures, the IFRS adoption in India will become very smooth and accurate. And this accounting System should be implemented in all joint stock companies, MNC's.

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Monetary Policy and Insurance Sector: Analysis from Indian Context

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Abstract: Monetary policy has been one of the most prominent policies necessary for the smooth functioning of any economy. It has a key role to play in the working of capital, financial and other related markets. Insurance industry always work in the direction of creating security for the citizens and in the process of making their future safe, it requires appropriate support and vision from the monetary authority of the nation. Monetary policy makes policies for the better working conditions of the markets involving finances of the nation including household savings and their investment options. In this regard, insurance companies have their say in an elaborated way. So, this paper aims at discussing the link between monetary policy and the insurance industry theoretically. It is observed that monetary policy makes an inevitable impact on the insurance sector and its components. And in Indian context, where the availability of the information about insurance and financial markets is not so widespread and equally distributed among the individuals, the relevance of monetary policy increases in degree and magnitude to make the things get in place.

Keywords: Insurance, Money Supply, Monetary Policy, Finance, Households

1. INTRODUCTION

In India, the authority for carrying out the monetary policy is Reserve Bank of India (RBI). Being one of the major economic policies required for the smooth functioning of the country, monetary policy aims at regulating the level of money in the economy with certain objectives which includes price stability, full employment, balanced economic growth etc. RBI manages the level of money supply in India to ensure enough liquidity flow in the economy and thus aiming at higher economic growth. In the whole process of maintaining stable growth in the nation, monetary policy does affect several sectorsin the country like agriculture, service, finance, capital, credit, debt markets, insurance etc. and there are many prominent indicators which are in relation with monetary policy like foreign exchange, prices, wages, employment, interest rates etc. The insurance sector is one of the relevant pillars of the economy which contributes not only towards the social and financial security of the people but also help in managing the financial status of the country. Monetary policy, through its actions, does affect this particular part of the country in a strategic manner. Because monetary policy has a major and direct impact on interest rates existing in the economy this it turns out that it does affect the insurance sector effectively. With changes in interest rates and prices in the economy, there is a direct influence on the mechanism of working of the insurance sector and also on its profits.

2. MONETARY POLICY FRAMEWORK IN INDIA

In India, Monetary Policy plays a vital role in the structuring process of the economy. RBI manages and operates the monetary policy in India. The main objective of the monetary policy is to maintain the stability in the process of economic growth and RBI focuses on fulfilling this objective through various tools like reserve ratio, discount rate, open market operations etc. RBI strategically works in the direction of achieving stability in the prices of the goods, maintaining highest possible level of employment, maximum production/output level, equality in the distribution of income, foreign exchange reserves etc. and uses several instruments for these objectives. To name categorically, there are two major types of instruments available at the disposal of RBI to implement monetary policy and these are: Qualitative and Quantitative measures. Qualitative tools include credit rationing and moral suasion. Credit rationing helps in managing speculations including inthe stock market. While using this tool to control the level of credit, central bank (RBI) has the complete authority to determine the lending margin as per the need in the market economy. It does impose the upper limit to the level of credit that can be lent by the banks to the market (industrial units/business enterprises/investors) and by managing the lending margin, RBI tends to control the value of bank credit flowing into the market. Next tool in the list of qualitative measures is moral suasion. It is basically a moral way of approaching and convincing the banks to control the level of credit as per economic situation of the country and sometimes, central bank ends up listing clear directives for the banks for the lending amount. Under quantitative measures, RBI has many tools, namely, open market operations, discount rate/bank rate, cash reserve ratio, statutory liquidity requirements, repo rate, reserve repo rate. With open market operations, RBI sells or buys the government securities in open market depending upon the need of the liquidity in the

economy. Bank Rate/Discount Rate is the minimum level of interest rate at which commercial banks take up loans from the central bank and by controlling this rate of interest on loans, RBI manages the level of credit flowing from it into the banking system. Cash Reserve Ratio (CRR) is the percentage of the total deposits of the bank to be kept as cash with RBI and statutory liquidity requirement is another form of reserve to be maintained by banks with RBI in the form of liquid assets. Repo rates and reserve repo rates are such interest rates that exist when commercial banks borrow money from RBI or lends to it in exchange for government securities as and when situation demands. In India, the structure of monetary policy has evolved a lot over the last many years for financial improvements, monetary developments and according to the changing macroeconomic conditions. The Reserve Bank of India (RBI) Act, 1934was also underwent an amendment in 2016. It was noted that after independence, the role of RBI was in line with the planning process of the nation especially with regard to five years plans undertaken by the economy. With many major banks undergoing nationalization in 1960s, the role of RBI has become strategic towards regulation of credit in the banking system. The focus of RBI has moved drastically towards managing the fiscal deficits during this time period. During 1990s, with the implementation of New Economic Policy (NEP), the changes in the financial needs of the economy demanded a new framework of the monetary policy amidst the ever-growing integration with rest of the global economy. In 1998, RBI implemented a Multiple Indicator Approach (MIA) to capture all the economic and financial variables into one frame. In 2015, The Monetary Policy Framework Agreement was signed between government and RBI to formally adopt the flexible inflation targeting (Dua, 2020). As per the new anchor of the monetary policy, central government has set 4% of consumer price index inflation as the targeted level of inflation from 2016 to 2021 and any deviation from the target shall be undertaken by RBI with remedial measures with proper analysis of the reasons for the failures. With this new structure in place, India has joined many other economies that have inflation targeting vision for their monetary policies.

3. IMPACT OF MONETARY POLICY ON INSURANCE SECTOR

Insurance sector of any economy works with the sole motive of providing social and financial security to the population residing within the territory of the nation. The insurance business is significantly influenced by the state of the economy and major factors that affect it are the rate of growth of GDP, the levels of domestic savings, household financial savings and disposable income. (Kartheeswari and Rajeshwari, 2012). The companies providing insurance basically offers risk management options to the receivers of the insurance and end up establishing insurance contracts to legalize and formalize the deal of working between the insurers and the insured ones. Insurance companies, in return, get payments from the insured party on regular basis (monthly/quarterly/annually) for the risk coverage provided by them which is known as premium. The insurance policy is considered as the contract between the insurance providing company and insured person/organization/business which establishes the formalities and legalities on terms for both the parties involved. The insurance is available for all kinds of assets, majorly, human life, house or property, land or any other related asset, automobiles or any other expensive possession and for businesses also for securing their long term or enormous investment from any possible source of damage or loss. There are various kinds or ways of providing insurance options to the required parties depending upon their assets or possessions. In general, the working of the insurance sector is based on major two pillars: first, types and values of different assets available within the economy or owned by the individuals along with thefinancial conditions of the households and Second, on the current monetary and fiscal policies of the government. The detailed assessment of the relationbetween monetary policy of the economy and the insurance sector requires us to dwell into understanding various economic and non-economic variables relevant for the functioning of any sector of a nation. There are many facets to the linkexisting between monetary policy framework and working of insurance sector. To begin with, the objective of monetary policy is to directly affect the level of money supply in the economy thus influencing the level of liquidity flowing in all the sectors and to fulfill it, RBI has several tools at its disposal and using any one of them (as per the need) can affect the purchasing power of the individuals which, in turn, help the insurance providing companies to function. In simple words, if monetary policy aims at increasing the money supply in the economy and end up boosting the level of liquidity flow/credit flow thus, individuals would find increase in their purchasing power and start possessing assets/valuable items. This tendency among the asset holders would lead to more buying of insurance policies. This can directly increase the revenue of the insurance companies. This way of impact of the monetary policy on the functioning of the insurance companies is plausible whether the insured party is a consumer or a producer in the economy for instance, if a consumer possess an asset, he would buy the insurance policy to secure the value of that asset and any producer/manufacturer who is involved in a business/revenue earning activity can end up possessing an insurance policy for the safety of the capital and other kinds of investment taken up to run that business. So, with monetary policy, directly increasing/decreasing the money supply can affect the yield of the insurance companies. Another aspect is with monetary policy focusing on improving the production and thus, employment in the economy, there would be a surge in the income earning individuals with more people getting jobs and earning salaries/wages. These new earners could be the new insured parties end up buying the insurance policies. Second source of relation between monetary policy and insurance sector is the rate of interest of the economy. Monetary policy tools do affect the interest rate in the economy in a prominent way for example when RBI increases the discount/bank rate

then it shoots up the interest rates in the market. This interest rate increase affects the profit level of the insurance companies. It is so because insurance company's profit estimates on the total value of all the premiums paid by the insurance receiving party in the entire tenure of the policy and the total value of the insurance paid by the company (if any). In such a case, the insurance company evaluates the present value of all the premiums to be paid by the insured party till the maturity and also of the future value to be paid by it for any kind of loss (with calculated probability for the loss or damage possible).The difference between these two present values gives the possible profit or return for the insurance company.According to annuity, the present values of the aforementioned payments specifically depend on the rate of interest existing in the economy.Higher is the interest rates prevailing, lower is the present values of the payments and thus affect the earnings of the insurance company.There is another element linking monetary policy and one of the essential factors that is Insurance sector is the distribution of income by the households for different economic and non-economic activities.If a household allocates greater proportion of its earnings for risky activities in the hope of higher returns in future then it can affect the timely payments of the insurance premiums and can pose a serious risk of non-payment or delay in the frequency of payments of the premiums. This, in turn, can cost the insurance company.Another aspect is if the households' sources of income involves risky activities then possibility of highly unstable flow of income and it can again hinder the smooth flow of insurance premiums over the period.So, greater the risk an insured individual or organization takes up, higher is the risk of loss for the insurance company.It is also noted that the working of theinsurance companies depends a lot on many relevant developmental factors of the economy.For example: better the medical facilities and health infrastructure in the economy, lower the death rates and better longevity which can benefit life insurance companies as they can continue to receive amounts of premiums from the insured party.Higher the level of income or wage equality in the economy, more equal and better employment and income generating opportunities among the individuals then high possibility of large number of insurance contracts establishing in the sector. Also, with greater investment level in the economy, there is high possibility of insurance policies to be bought by entrepreneurs/manufacturers for future security and safety of their businesses. Thus, there arises a strong link between the monetary policy which manages the money supply of the economy and the Insurance sector.

In India, the working of Insurance sector has been led by Life Insurance Corporation (LIC), the soul public sector company dealing in life insurance business with changing mechanism of the functioning and the vision of the monetary policy over the time.The insurance companies have also been undergoing several changes with NEP in place during 1990s.There was a new framework of monetary policy to manage domestic as well as Foreign Exchange Reserves and at the same time to maintain the global integration. At this time, Insurance sector benefited a lot due to Foreign Direct Investment (FDI) and as per Union budget 2019-20, 100% FDI was now permitted for insurance intermediaries.With new anchor of the monetary policy in the picture, flexible inflation targeting, the steps by monetary policy committee have been towards achieving the inflation target which has the appropriate impact on the existing interest rates in the economy that, in turn, effect the profitability of the Insurance sector.Under MIA, Central Bank (RBI), decisions and actions would be dependent on all major economic variables like foreign trade, capital flows, inflation growth, banking stability, employment, stable exchange rate, rate of return, rate of interest, etc.This new flexibility with RBI to capture in the impact on all important growth parameters help the insurance sector to encompass its functioning accordingly.The data from Insurance sector supports the fact that with improving income levels and infrastructural facilities, there has been increase in the growth of insurance business especially in rural areas and greater awareness has led to huge demand for insurance policies. The share of rural to total new businesses in terms of policies has increased from 32.8 percent in 1981-82 to 55.5 % in 2000-01. (Annual Reports of LIC).

4. CONCLUSION

Monetary policy is one of the two most important policies aiming at the economic growth of our country.It operates and regulates the level of money supply in the economy and affect several economic and non-economic variables for the overall growth and development of the economy. Insurance sector, being one of the essential sectors of the nation, has a huge dependency on monetary policy as the latter directly impacts the interest rates and so does the profits of the insurance sector.In India, the relation between monetary policy and the working of insurance business is noticeable through many facets: interest rate, rate of inflation, level of employment, wage rates, income distribution within households, development factors affecting.So, there is a serious need for operating monetary policy in an appropriate manner so that it fulfills all the objectives for the economy and with special focus on expanding the reach of the Insurance sector.

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Scrutinizing the Effects of Digital Technology on Mental Health

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Abstract: ***The Covid-19 Pandemic accelerated the use of technology in each and every field. The maximum revolution is faced by the education industry which arises an important question that whether increase in screen time is safe in context of mental health. This paper tries to articulate some of the impacts of the digitisation induced by smart phones or e-gadgets from psychologicalview points. Having perceived the phenomenon within the framework of social stratification, the paper tries to explore the, (i) the screen time, (ii) Further, the purpose of using e-gadgets, (iii) The paper also analyzes the correlation between the screen time and depression and (iv) correlation between screen time and anxiety. Based on primary source data, the paper is a study of forty young adults. The sampling technique is purposive.***

Keywords: ***E- gadgets, smart phone, mental health, depression and anxiety.***

1. INTRODUCTION

Technology has changed the way of living. Revolution in technology has facilitated each and every field. E-gadgets are not a part of luxury but are our need these days. The efficiency, accuracy and accessibility of various resources attracted the people to use technology. One of the most common device is smart-phone. Smart phone has even replaced many other gadgets as many of the features are already provided in this device only. Calculators, wrist watch, camera are some of the examples which have become obsolete because of the popularity of smart phones. Nearly all the younger generation today, own a mobile phone with 72% owing smartphones and are used for various purposes like communication, study, internet surfing, entertainment, e-commerce, paying bills, booking tickets and many more. Laptops, desktops, tablets are also quite popular among young generation.All these have increased the screen time of an individual which may result some physical and mental discomfort."Excess of everything is bad", is a well-known proverb and same applies to the use of electronic gadgets too. Excess use of these devices are not advisable.

Like physical health one should also take care of metal health. In 1954 the World Health Organization declared that without mental health there can be no true physical health. No doubt mental health is a major concern these days world wide but in India the progress rate is very slow. Awareness about mental health is quite less and people are not concerned about mental health. Many stereotypes are there in Indian culture regarding the mental health. Government is taking actions in spreading the awareness about mental health by running various campaigns.

Accurate measurement and improvement of citizens of country requires some specific indicators. Three indicators of mental health are described, these key areas are disorders of thinking, disorders of mood and disorders of behaviour.

2. SIGNIFICANCE OF THE STUDY

Traditional working strategies are changed to on-line working especially in the time of COVID-19. People are compelled to work from home during this pandemic. Online work requires the usage of electronic gadgets especially laptops/desktops, Tablets and smartphone. Use of these devices will definitely increase the screen time. The present research is the thrust to know the correlation between the screen time and mental health.

3. REVIEW OF RELATED LITERATURE

Disadvantages of Excess Screen Time

(Michelle D. Guerrero, Joel D. Barnes, Jean-Phillippe & Mark S. Trembley 2019), "Screen time and problem behaviors in children: exploring the mediating role of sleep duration" concluded that the correlation between the time spent and problematic behaviour is positive. Agression, problems related to thought process and rule breaking behaviour is reported. Sleep duration mediated the relationship between ST and problem behaviours. There was strong evidence that longer sleep duration was associated with reduced problem behaviors.

(Chloe Reichel, 2019), Effects of Screen Time on Studies, Study ranged from childhood to adolescence and focused on sleep, developmental progress, depression and successful interventions to reduce screen time.

(Tamana, Sukhpreet K.; et al, 2019), This study analyzesthe data collected from the parents and analysed and the researcher found that parent-reported that increase in screen time is resulting in behavioral issues such as inattention and aggressiveness. The effects: Kids who were exposed to more

screen time "showed significantly increased behavior problems at five-years," the authors write. "Briefly, children who watched more than 2 hours of screen time/day had increased externalizing [e.g., attention and behavior], internalizing [e.g., anxiety and depression], and total behavior problems scores compared to children who watched less than 20 minutes." Kids who were exposed to screen for more than two hours were facing more attention problems than those who were exposed for less than 2 hours.

(Madigan, Sheri; et al., 2019), Association between Screen Time and Childen's Performance on a developmental Screening Test; the researchers found that screen time is directly related to the developmental process. Kids whose screen time was more than two hours reported a poor development than those who are exposed to electronic devices for less than two hours.

(Adelantado-Renau, Mireia; et al., 2019)in the study titled Association between Screen Media and Academic Performance among Children and Adolescents looked at computer, internet, mobile phone, television and video game use individually, as well as overall screen time. Outcomes of interest included school grades, performance on academic achievement tests, academic failure data, or self-reported academic achievement or school performance. The key findings were as time spent watching television increased, academic performance suffered. Relationships were less clear-cut for other types of screen use.

ProductiveEffects of Technology

(Tsitsika &Janikian, 2013) In fact the use of the tech-gadgets is quite beneficial development for economic development and the youth is using it in innovations and strengthening the economy of country. Tech-devices and gaming may have positive effects on investigating skills, strategic thinking and creativity potential of the individuals. These devices are the best source of learning and life long learning. Technology helps in the assess of the resources. To cross the levels step by step in the games may improve the engineering skills among the youth and it may also help in building up good attitudes of moving ahead in life in spite of any obstacles. People who have same interests and skills are connected with each other through Linkden or skill share etc. so these are providing the platform of social connectedness.

(Samson, 2010), investigatedthat the guided learning means under the instructions and supervision of the teacher or guide the students learn better and remain connected to learning objectives. It ensures the classroom engagement and positively affect the learning.

(Ophir, Nass & Wagner, 2009) concluded thatindividuals who are using or involved in high level of technical activities through the digital devices are better in having effective cognitive skills, It reflects that the use of devices is enhancing the cognition as well as the multitasking.

Negative Impacts of Technology

In the researches discussed above the researchers explored the positive impacts of technology but the technology is having the negative impacts also. There is a well known proverb that every coin is has two sides same is with the technology. Technology is boon and bane also. Researches are made in this field also.

Following studies highlight some of the negative effects of the tech-devices and services

(Walsh, 2012) suggested thatit is better to make the people awre about the adverse effects of technology and that to timely so that people cannot be trapped into it or do not get trapped or addicted to the use of technology. The students should also be made aware of the hazards of technology so that they can make the justified use of technology.

(Erickson, 2012) researched onthe voracious use of tech services has negative impacts on the youth. Due to these effects youth tries to find their comfort zone and harness technology according to their choice. The socialization is limited to social networking sites only.

(Cabral, 2011) explored thatGeneration-Y is making the youth addicted to the use of social networking sites like Facebook, Instagram'setc.. The addiction causes intra-psychic conflicts such as intolerance and relapse among the youth.

(Young, 2004) Concluded that the excessive use of technology affects the academic performance, their relationships and their holistic performance and slowly it converts to addiction resulting in loss of physical health and mental health.

(Shapira et al., 2003) concluded thatthe excess use of internet is generating disorders and causing distress.

(Cotton, 2001) inferredthat gaming and e-commerce is resulting in depression among the young adults and there is an urgent need of implementation programmes to reduce these.

(Young, 1998) emphasized that the addiction of internet is adversely affecting the mental health of users. The relationship between the addiction of internet and psychiatric disorders is positive like depression, bipolar disorder, obsessive-compulsive disorder, attention deficit disorder, etc. So the addictive internet use should need clinical help.

Impact of Technology on Health and Life-Style

Prof. Phil Reed (2013), The mental as well as physical health get affected by the excess use of technology positively and negatively. Addiction can have negative impact on physical and mental health. Addiction as the cause of the depression, social isolation, and disrupted sleep of the present generation. He also argues that the same has many other negative impacts on their health.

Burns and Lohenry (2010) conducted a study on faculty and students in the health sciences investigating the perception of

mobile phone use during class. Indeed they discovered that 40% of the students used their phones during class which caused a distraction for 85% of the students. A similar study showed even higher figures, with 95% of college students stating that they bring their phone to class every day and 92% even admitting to sending text messages during lectures.

Monk and Colleagues (2004) investigated people's perceptions of phone conversations compared to face-to-face conversations in public settings. The researchers exposed 64 members of the public to the same staged conversation, either while waiting at a bus station or travelling in a train. Half of the conversations were by mobile phone, so that only one end of the conversation was heard, and half were face-to-face conversations where both sides of the conversation were heard. The volume of the conversations was controlled at one of two levels: the actors' usual speech level and excessively loud. Participants' verbal ratings following exposure to the conversations showed that mobile phone conversations were significantly more noticeable and annoying than face-to-face conversations at the same volume when the content of the conversation was controlled for.

4. RESEARCH METHODOLOGY

The present study is descriptive and correlational in nature. Descriptive as the researcher attempted to study the screen time of young adults and the purpose of using E Gadgets. Correlational as the thrust of the study is to find the coefficient of correlation between screen time & anxiety as well as screen time and depression.

4.1 Objectives of the study

1. To study the screen time of young adults.
2. To know the purpose of using E-Gadgets.
3. To study the correlation between the screen time and anxiety.
4. To study the correlation between screen time and depression.

4.2 Hypotheses of the Study

H_1: There is a significant relationship between the screen time and anxiety.

H_2: There is a significant relationship between screen time and depression.

4.3 Variables of the Study

Independent Variable – Screen Time

Dependent Variable- Depression, Anxiety

4.4 Sample

The sampling technique used for the present study is purposive as the focus of the study was the effect of screen time on mental health of young adults, the researcher has taken 40 young adults between the age group of 20 years – 40 years. The majority are students of a professional course from the IP affiliated institute, few senior managers and database administrators.

4.5 Tools

After reviewing the related literature and identifying the variables, self-made questionnaire is constructed to collect the data. The Questionnaire was divided in 4 parts Section A, B, C and D respectively. Section A was based on General information such as Name, Age, Occupation. Section B includes the information about the screen time and purpose of using E Gadgets. Section C contains the questions regarding anxiety whereas Section D contains questions about depression. The questionnaire was close ended and constructed using 4 pointLikert scale.

Table Scoring Key of Depression

11-19	20-28	29-36	37-44
Minimal	Mild	Moderate	Severe

Table Scoring Key of Anxiety

12-21	21-30	30-39	39-44
No Anxiety	Low	Moderate	High

The scores are calculated using the following formula:

$$\frac{\text{Greatest Score- Lowest score}}{\text{Number of Scales}}$$

4.6 Procedure

The questionnaire was made to study the effect of mobile phones on mental health of young adults. Due to complete lockdown the test was constructed on the global platform of google forms. The participants were briefed about the test via E-Mail, important instructions like- Time Limit to fill the form (i.e<4minuites), Participants were asked to mark the first option that clicks in their mind, Participants were also informed that there is no right or wrong answer. Afterwards they were given a password to begin the test. N
the responses were received, the report was formed keeping in mind all the required parameters.

5. DATA ANALYSIS

Objective 1 to study the screen time of young adults.

TABLE 1: Showing the Percentage of Respondents and their Total Screen Time

Screen Time	8 Hours	10Hours	12 Hours	14 Hours	16 Hours	18 Hours
Percentage of Respondents	30	25	23	8	10	5

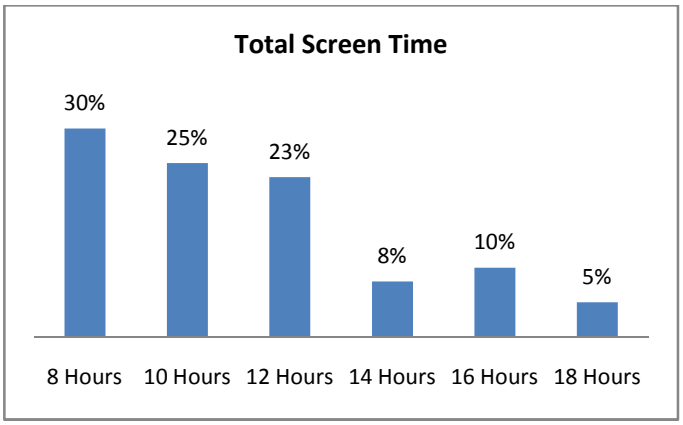

Fig. 1.Total Percentage and Total Screen time

Interpretation: Fig 1 shows total screen time of respondents. 30% respondents have the screen time of 8 hours, 25% respondents have screen time to be 10 hours, 23 respondents have 12 hours, 8% has screen time to be 14 hours, 10% have 16 hours and only 5% have the screen time to be 18 hours.

Objective 2To know the purpose of using e-gadgets.

TABLE 2: Showing Use of e-Gadgets for Social Networking

Duration	2 Hours	4 Hours	6 Hours	>6 Hours
No. of Respondents	27	9	3	1

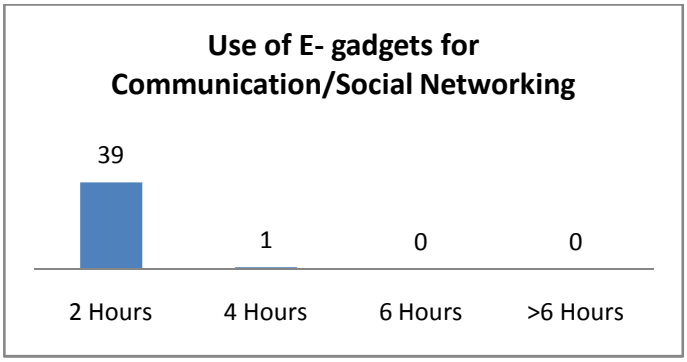

Fig. 2. Use of e-Gadgets with duration

Interpretation: The results shown by the fig are that majority of respondents are using the e-gadgets for communication and social networking for 2 hours. Nine respondents are using e-gadgets for 4 hours, 3 respondents for 6 hours and only one is using e-gadgets for >6 hours.

TABLE 3 Showing the Use of e-Gadgets for Entertainment

Duration	2 Hours	4 Hours	6 Hours	>6 Hours
No. of Respondents	27	12	1	0

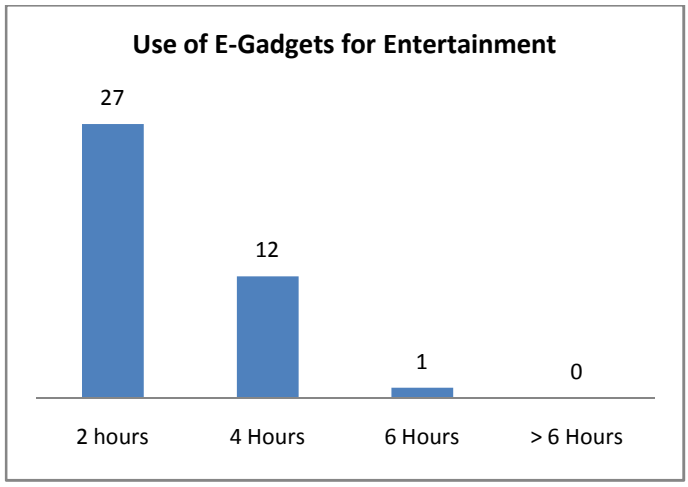

Fig. 3. Use of e-Gadgets for Entertainment

Interpretation: Results highlights that the maximum number of respondents are using e-gadgets for entertainment for 2 hours only. 12 respondents are using e-gadgets for 4 hourswhereas one found in the range of 6 hours and only no respondent is using e-gadgets for >6 hrs.

TABLE 4: Showing Use of e-Gadgets for Study

Duration	2 Hours	4 Hours	6 Hours	>6 Hours
No. of Respondents	24	11	4	1

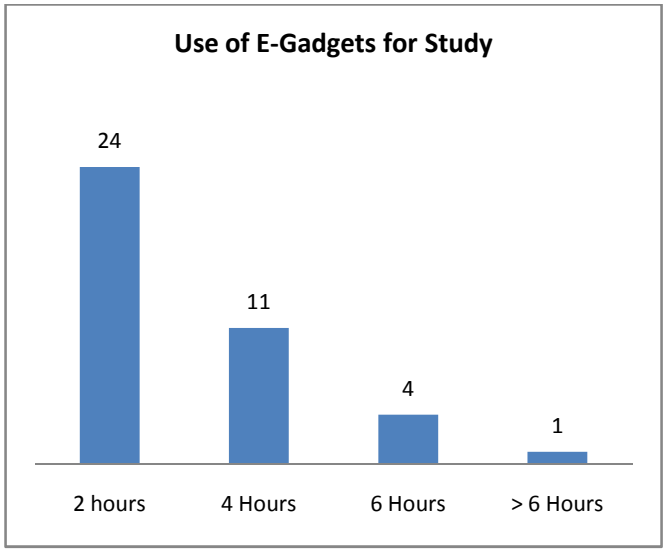

Fig. 4. Use of e-Gadgets for Study

Interpretation: The fig shows that majority of respondents are using e-gadgets for study purpose for 2 hours only. 11 respondents are using e-gadgets for 4 hours, 4 respondents lie in the category of using e-gadgets for 6 hours whereas only 1 respondent uses e- gadgets for >6 hours.

TABLE 5: Showing e-Gadgets for E-Commerce

Duration	2 Hours	4 Hours	6 Hours	>6 Hours
No. of Respondents	39	1	0	0

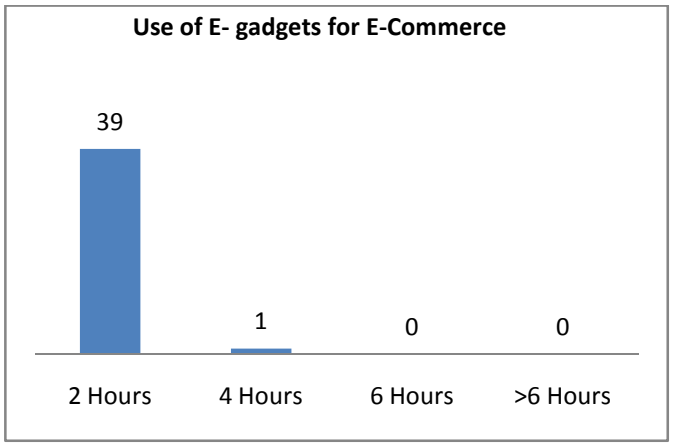

Fig. 5. Use of e-gadgets for E-Commerce

Interpretation: It is highlighted in the fig that almost all the respondents are using e-gadgets for e-commerce for 2 hours only whereas only one respondent is using e-gadgets for the purpose of e-commerce for 4 hours and no one is using for 6 as well as for >6 hours.

Objective 3: To study the correlation between the screen time and score of depression.

H1: There is a significant relationship between screen time and anxiety

TABLE 6: Score of Depression

Category	Mild	Minimal	Moderate	Severe
No. of Respondents	14	21	4	1

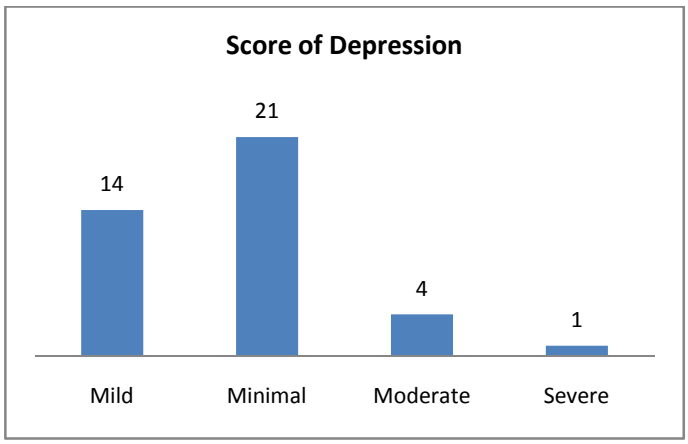

Fig. 6. Score of Depression

Interpretation: Results highlight that 14 respondents are in the category of mild depression, score of 21 respondents is minimal, 4 respondents are suffering from moderate depression whereas only 1 is suffering from severe depression.

TABLE 7: Correlation between Screen Time and Depression

Correlation between Screen Time and Depression	0.168298

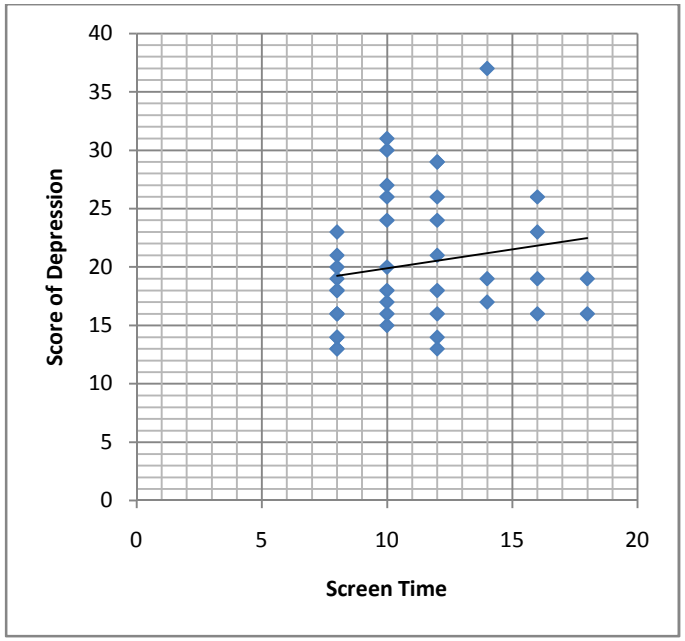

Fig. 7. Correlation between Screen Time and Depression

Interpretation: The coefficient of correlation between screen time and depression is 0.168298; quite closer to zero, which shows a very weak positive association between the screen time and score of depression.

The hypothesis (**H_1:**There is a significant relationship between the screen time and anxiety.

H_2: There is a significant relationship between screen time and depression.) is rejected; the relationship between the screen time and depression is not significant.

Objective 3: To study the correlation between the screen time and score of anxiety.

H2: There is a significant relationship between screen time and anxiety.

TABLE 8 Score of Anxiety

Category	No Anxiety	Low Anxiety	Moderate Anxiety	High Anxiety
No. of Respondents	5	18	15	2

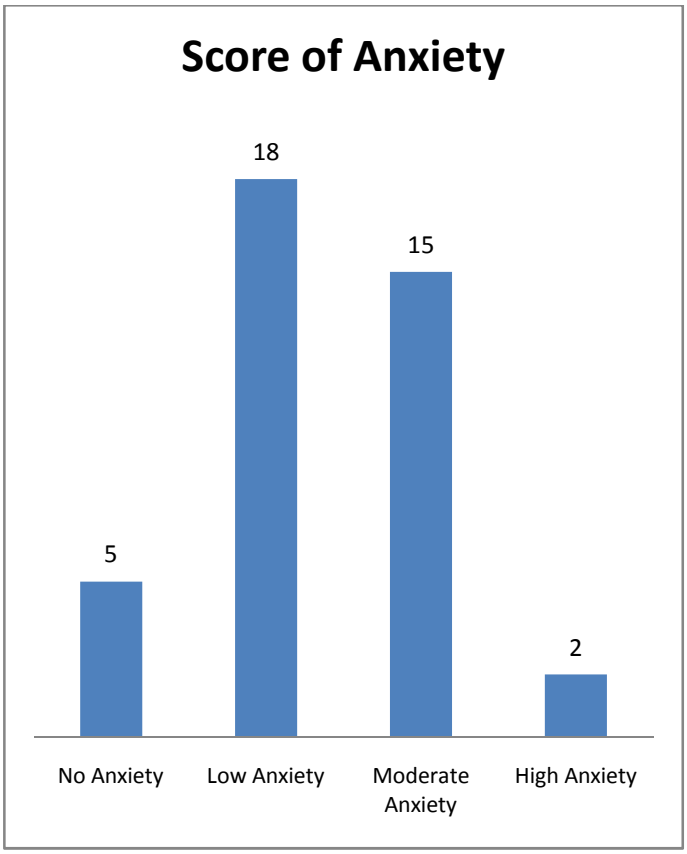

Fig. 8. Score of Anxiety

Interpretation: Table and fig highlights that 5 respondents are reported with no anxiety, 18 respondents with low anxiety, 15 with moderate anxiety and 2 respondents have high anxiety.

TABLE 9: Correlation between Screen Time and Anxiety

Correlation between Screen Time and Anxiety	0.1033

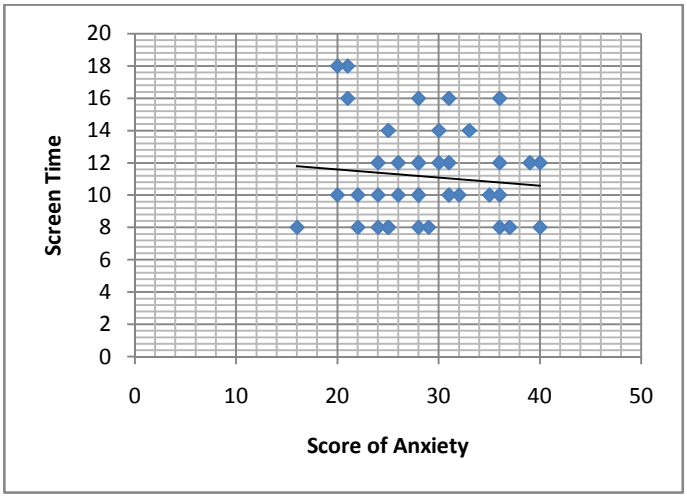

Fig. 9. Correlation between Screen Time and Anxiety

Interpretation: It is shown in the table and fig. that the coefficient of correlation is 0.1033; the value is quite closer to zero which emphasises that the relationship between the screen time and anxiety is very weak and positive therefore the hypothesis (**H_1:**There is a significant relationship between the screen time and anxiety.

H_2: There is a significant relationship between screen time and depression.) is rejected, the relationship between screen time and anxiety is not significant.

6. DISCUSSION

The present study is focussed on studying the screen time of young adults and the researcher has found that the maximum number of respondents have the screen time of 8 hours and no found less than 8 hours which is extremely high as the recommended screen time is 2-4 hours. As well as regarding the purpose the study revealed that the maximum number of respondents are using Facebook, Twitter, what's App for 2hours, for entertainment spending 2 hours, for study purpose also the maximum respondents are spending 2 hours and for shopping spending 2 hours too. (**Cabral, 2011**) revealed that the present generation is psychologically addicted to the Social Medias like face book, Twitter etc and this addiction causes intra-psychic conflicts such as intolerance and relapse among youth. The studies in the field of internet addiction are conducted by expertise of multiple fields like academicians and health professionals. Margaret Bach, C.N.P, Vivian Tran, MD recommend, No screen time whatsoever for children under 2, One hour a day for children 2 to 12, Two hours a day for teens and adults

Dr.SageetaRavat, Head of the Department of Neurology at Seth G S Medical College and KEM Hospital quoted that the correlation between Mild Attention deficit Hyperactivity Disorder among young adults and the excessive use of gadgets has been the subject of debate at recent medical conferences.

(Meece, 2011) revealed that sleep disturbances, stress and depression are among the negative impacts that have been linked to excess phone use. The present study revealed that the correlation between the screen time and score of depression is 0.16, which reflects that there exists a weak association between them. The correlation between screen time and score of anxiety is 0.133; the value is quite closer to zero which emphasises that the association between them is quite weak.

Although the term mental health is quite broad but the present study is limited to study the correlation between the screen time and depression as well as screen time and anxiety; the results highlighted that there is no correlation between the screen time and mental health. Only one respondent was found in the category of severe depression and two in the category of high anxiety but when checked for their screen time it was found that their screen time was 10 hours and those who were having screen time of 18 hours were have their scores of depression and anxiety in mild category.

Major Findings

- Maximum number of young adults have screen time of 8 hours.
- Majority of young adults use social networking sites for 2 hours.
- Screen time devoted for the study by majority of young adults is 2 hours.
- Screen time spent for entertainment by maximum number of users is 2hours.
- For e-commerce maximum number of young adults spent 2 hours on e-gadgets.
- Coefficient of Correlation between screen time and score of depression is very weak and positive.
- Coefficient of Correlation between screen time and anxiety is very weak and positive.

7. CONCLUSION

The technology has drastically changed the life style and nature of work. E-gadgets are the indispensible part of our life. Use of e-gadgets has both positive and negative effects on our physical and mental health. The core objective of the study was to study the effect of excess screen time on mental health. The hypotheses were to study the correlation between screen time and depression and to study the correlation between screen time and anxiety.The study is descriptive and correlational in nature. To accomplish the objectives, self-made questionnaire was used to collect the data. Sampling technique used was purposive. Sample of 40 young adults between the age group of 20 – 30 has been taken. Descriptive and inferential statistics was used to analyse the data. Results highlighted that the screen time of young adults is four times more than that of prescribed by the doctors. The purposes of using e-gadgets are social networking, study, entertainment and e-commerce. Majority are using for 2 hours, few are using for 4 hours and very few for 6 and >6 hours. Results highlight that the coefficient of correlation between screen time and depression is very weak as well as the coefficient of correlation between the screen time and anxiety is very weak.

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An Introduction to Concise Research in Digital Entrepreneurship

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Abstract: ***The technology has progressed a lot in the past few decades which has further led to the digitization and digitalization of economies which are now best known as digital economies.The COVID-19 pandemic has proved to be the major reason behind accelerating the development of the digital economy. In a digital economy, digital entrepreneurs have played a vital role in creating opportunities to produce digital artifacts on digital platforms, which further lead to creation of these much-demandeddigital stores or platforms themselves. There is a created a huge demand for more and more research on the key concept of digital entrepreneurship. This paper revolves around the various aspects of digital entrepreneurship to be figured out. The paper discusses about the key concept of digital entrepreneurship, followed with the difference between digital economy and entrepreneurship perspectives. The next section of the paper focuses on the impact of digitalization - and big data - on business models and entrepreneurship. One of the key components of the paper is also to understand the needs of various Digital Platforms required to promote digital entrepreneurship. The paper also emphasizes on various areas of digital entrepreneurship which has been neglected till now and could have a vast area of future research.***

Keywords: Digital Economy, Entrepreneurship, business models, digitalization, digital platforms

1. INTRODUCTION

With the spread of the covid pandemic, there have been a massive lockdown implemented in almost all regions including, shutting down of various government and non-government organization. It has also shut all the activities that require human gathering and interactions - including colleges, schools, malls, temples, offices, airports, and railway stations. The lockdown has resulted in most people taking to the internet and internet-based services to communicate, interact, and continue with their job responsibilities from home. Internet services have seen rises in usage from 40 % to 100 %, compared to pre-lockdown levels. There are various video-conferencing services available such as Zoom, Microsoft teams etc which have seen a massive increase in the usage of approximately 10 times, and content delivery services like Akamai have seen a 30 % increase in content usage. The cyber city of Bangalore have seen a perfect 100 % increase in internet traffic.

Employees are adjusting to new "normals" - with meetings going completely online, office work shifting to the home, with new emerging patterns of work. These changes have been seen across most of the organizations including business, society, or government. The changes have also been found to be seen suddenly, with barely any time given to the organizations and people to plan for the same, prepare and implement new setups and arrangements. They also have to get adjusted to try, experiment, and find new ways that did not existed before.

The digital revolution has resulted in leading upcoming technologies such as ubiquitous computing, internet connectivity, digital devices, big data, artificial intelligence (AI), and digital platforms. Consequently, the digital revolution has also made new forms of entrepreneurship possible, has accelerated the creation and scaling up of new businesses, and has changed the contours of competition. The incorporation of digital technologies along with entrepreneurship, the entrepreneurial processes has become more transparent and its relevant outcomes have become increasingly malleable, extendable, and modifiable."

The collaboration of digital technologies with entrepreneurship has resulted in the concept of digital entrepreneurship. The major research in this aspect includes the studies exploring and (possibly) theorizing on entrepreneurial processes, out-comes and agency transformed by digitization, or by rephrasing it as digital transformation of entrepreneurial processes its relevant outcomes and the various agencies involved with the same. Digital entrepreneurship research is in its infancy. The acceleration of the digitalization of the world economy as a result of the COVID-19 pandemic has escalated the urgency to this need of the hour.

2. OBJECTIVES

1. To understand the concepts of digital entrepreneurship.
2. To identify the merits and demerits of digital entrepreneurship.
3. To assess various Digital Platforms required to promote digital entrepreneurship.

3. RESEARCH METHODOLOGY

The paper is primarily based on the descriptive study across the various platforms of digital entrepreneurship.

4. WHAT IS DIGITAL ENTREPRENEURSHIP?

In today's scenario of the digital era almost all entrepreneurship activities are now digital or data-driven to the extent that it involves in one or the other way of computation with the help of a computer. Digital entrepreneurship should include opportunity recognition and exploitation within the digital economy. Then, digital entrepreneurship is hence the "pursuit of opportunities that are purely based on the applications of digital media and other digital sources of information and communication technologies". It should also explicitly include the "digital" dimensions (i.e., entrepreneur, entrepreneurial process, and ecosystem) of opportunities.

The largest chain of entrepreneurship Uber drivers and AirBnB hostesses are further not the examples of digital entrepreneurs. The owner of a mobile phone repair shop who is an entrepreneur but is not a digital entrepreneur. Similarly, there are millions of entrepreneurs who are selling their non-digital goods through online mode but they are not digital entrepreneurs. Thus, merely the participation on digital platforms or digital marketplaces are not sufficient enough to classify an entrepreneur as a digital entrepreneur, nor are using digital technologies (e.g. 3D-printing or mobile money) in their business domains. Digital entrepreneurship is hence recognized by the digital artifacts and the influence of these artifacts on the nature of the entrepreneurship process. These artifacts are defined to be any digital component or an application or any content that is the integral component of a new product or a service provided to the end user. The latest ventures started by digital entrepreneurs are also known as "digital ventures" are included among some of the world's most valuable companies, including Apple, Google, Microsoft and Facebook started out as digital ventures whose offering consisted of a digital artifact. The digital artifacts are defined to be "man-made purposeful objects embodied in information and communication technology components of software and hardware"

5. DIGITAL ENTREPRENEURS

Digital entrepreneurs are entrepreneurs who exclusively focus on digital commerce which is a major subset of e-commerce being used extensively to delineate companies that create digital products and services that are being marketed, delivered, and supported completely online (through digital platform).

6. ADVANTAGES OF DIGITAL ENTREPRENEURSHIP

1. **Global Reaching:** Any website or a social media channel that allows you to find new markets and trade globally for small investment in the project or the company.
2. **Lower Cost:** The digital marketing campaign can reach the right customers at a comparatively low cost in a proper planned and a targeted approach as compared to those of the traditional marketing methods.It also enables the organizations to spare some money that is going o be very component being truly considered by the associations as the Digital showcasing techniques does not require a big budget and ca be accommodated in a lower budget itself.
3. **Measurable Results:** The effectiveness of the campaign can be easily measured through online marketing with social media, web analytics, and other online metric tools.The detailed information about how customers can be obtained through the usage of your website or the responses received for your advertisements.
4. **Personalization:** The customers can be given a personal respect if the customer database is linked with the website of the organization. So, whenever someone will visit the website, the customer can be greeted with various targeted offers and schemes. The more the customer make purchases from a digital entrepreneur, the more his customer profile can be refined and the corresponding market can be showcased effectively to them.
5. **Social Currency:** Digital marketing basically engage in the creation of several digital campaigns using several marketing contents and tactics. This content is digital in nature and comprise of images, videos and articles which will further gain social currency.

7. DISADVANTAGES OF DIGITAL ENTREPRENEURSHIP

1. **Skills and Training:** The staff employed has to be quite knowledgeable and have an expertise to carry out digital marketing with acute precision.As we know the digital tools, platforms, and trends are changing rapidly in the digital era and it's vital to keep ourselves up-to-date.
2. **Complaints and Feedback:** As we know that digital entrepreneurship s highly transparent and as a result any negative feedback or criticism of the organization or brand will be visible to the relevant audience as well through the means of social medias and several websites dealing particularly in taking reviews. Carrying out effective customer service online is going to be highly challenging. As the negative comments or slow response or failure in responding may highly damage the reputation of the organization.
3. **Security and privacy issues:** There are a number of legal aspects and considerations revolving around collection and utilization of customer data for digital marketing purposes. It has to be taken care of with utmost sincerity and authenticity to comply with the rules and regulations regarding data privacy and data protection.
4. **High Competition:** As we know the market of digital entrepreneurship reach a global audience by the means of

digital marketing, which leads to the global competition. It can be very challenging to stand out against the competitors and take away attention among the many messages aimed at consumers online.

8. DIGITAL PLATFORMS AND DIGITAL ENTREPRENEURSHIP

A digital platform is mandatorily required to fulfill an intermediate, or a matching criterion, amongst the various users particularly in the digital economy.Itis defined to be platform such as a business strategy or could be an organization itself. Several researches are being pursued in this domain and idea of digital platforms is proposed for both firm and market. Generally, digital platforms contain four kinds of participants (who often switch roles or fulfill more than one role at once): the owners of the platform, the producers of content, the customers who consume the content, and the providers of the interfaces between producers, customers and the owners. A digital platform could be classified as one-way digital platforms (such as Spotify), two-sided (such as Uber) and multi-sided platforms (such as Microsoft). The multi-sided platforms are generally considered to be intermediaries or matchmakers, that often do not even produce their own content (such as Facebook).

Digital platforms have even changed the nature of competition in markets, and disrupted many of the traditional, pipeline business models. Some of the examples include Amazon upending traditional booksellers such as Borders, or Netflix upending traditional video-rental firms such as Blockbuster. This has led to warn that "When a platform enters a pipeline firm's market, the platform is almost very appreciative and gain a good market." While digital platforms are, for reasons that will be explained below, prone to dominate their market, they lead to further disruption through enabling 3rd party entrepreneurs to start new digital ventures on the platform. For this reason, considers digital platforms as "launching pads for new and potentially disruptive firms".

Thus, digital platforms are an essential phenomenon in digital entrepreneurship. The digital entrepreneurs primarily createopportunities to produce and pursue trading in digital artifacts on existing platforms, or may even create these platforms as well.

A major challenge faced by digital entrepreneurs in the establishment of a successful digital platform, is that it requires significant outlays on fixed costs. At times it is also mistaken to assume that due to an increased cost in the digital economy and several policy makers being involved, there might be no fundamental costs which are incurred.

The digital platform not only affects digital entrepreneurship but also directly or indirectly impact the traditional entrepreneurship. One of the major effectsof such platforms is that, many traditional firms are being benefitted from these digital platforms. Some of the leading examples includes a major hike in wearable devices (e.g. Fitbit, Samsung Fit Bands, Apple Bands, Goqiietc) which has increased in terms of the value (consumer surplus) because of being software driven by growing volumes of the data available on the data clouds. This is considered to be one of the most significant impact in terms of the marketing competition between digital platform and non-digital platform entrepreneurs on the traditional firms.

9. CONCLUSION

In conclusion, while the regulatory challenges posed by digital entrepreneurship are substantial, the generation of large volumes of data on entrepreneurs through and on the digital economy, can in fact help authorities and support agencies in their governance functions. The digital footprints and digital shadows casts by entrepreneurs online will allow matching scarce resources with entrepreneurs of high ability who are more likely to succeed, has been lack of information. Indeed, as far as entrepreneurial success is concerned, the current consensus is still that it is largely unpredictable. With large datasets becoming available, a number of scholars have recently argued that it will become easier to predict success and thus tailor support and other governance measures for example, taking the career histories of two million entrepreneurs and using machine learning algorithms, classify entrepreneurs into "hobos" and "highflyers", with hobos being "self-employed entrepreneur who often depart relatively low-wage jobs and may further sacrifice income for the autonomy of self-employment" and highflyers who "exit high-wage, high-advancement careers to launch high potential companies" .This is a promising line of future research that offers the potential to improve the allocation and efficiency of public support policies for all entrepreneurs.

The concept of digital entrepreneurship was understood to be the pursuit of opportunities based on the applications of digital technologies. Digital entrepreneurs produces and pursue trading in so-called digital artifacts or the digital platforms or it may also deal in creation of these digital platforms themselves.

Digital entrepreneurs create and grow such platforms or compete on it. The presence and impact of digital platforms has become substantial, with implications extending to traditional, non-digital entrepreneurship. Digital platforms come with both positive and negative consequences, but more research is needed on any of these issues to clearly judge which ones out-weigh the others.

However, future research should still focus on testing the various propositions that have been derived from it. No matter how well policymakers' will maintain their understanding regarding the concept, but the regulatory challenges posed by digital entrepreneurship still remain substantial.

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Analysis of Environment Kuznets Curve in India

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Abstract: In the developing countries the economic growth is said to be coupled with increase in the energy usage, which results in increase in the environment pollution.According to literature of EKC (Environmental Kuznets Curve) hypothesis, it is said that in any country the environmental damage increases in the early stages of economic growth but comes down as country reaches a higher level of income coupled with economic growth. The existence of EKC in any country is determined by many certain factors and it has a shape. In this paper, we used the quadratic and cubic form of EKC in the Indian context, with CO2 emissions (metric tons per capita) as dependent variable and economic growth as independent variable. The study used the time series data of India collected from World Bank Database for the period 1960 to 2014. The outcome of the study revealed the existence of inverted 'U' shaped curve and N shaped curve in India.

Keywords: EKC, OLS Regression, Econometric Model.

1. INTRODUCTION

India is one of the fastest growing economy, coupled with increase in the population. This has led to increase in the consumption of energy resource and thereby increasing the environmental pollution.Carbon dioxide is one of the major contributors to the Green House gases and responsible for more than sixty percent in global warming. The international community is showing great concern to reduce the level of carbon emission. The Kyoto Protocol, which was signed in 1997, is an important attempt by United Nations Framework Convention on Climate Change (UNFCCC). The important feature of this protocol was to decrease the collective emissions of GHGs of 39 industrialized countries and European Union by 5.2 percent from 1990 level during the period of 2008-2012.

There has been a trade-off between economic growth of a country with its environmental sustainability as economic growth has always ignored environment.

According to Beckerman (1992), there exists a strong correlation between income and awareness of environment responsibility. When a country has high income, appropriate measures are taken to improve the environment.EKC (Environmental Kuznets Curve) is the reflection of this theory. According to EKC hypothesis: "Environmental damage increases in the early stages of economic growth but diminishes once nations reach higher levels of income"[1].

A lot of research work has been done to prove the existence of EKC inverted U-shaped curve between the economic growth and the environmental degradation markers in different countries. In India if we observe the development course after independence, focus was primarily on agriculture that later on shifted towards industrialisation and finally towards service sector. This has ledto environmental damage as well as increase in the economic growth of the country. This becomes the basis of our research to check the existence of Environment Kuznet Curve in India.

In this paper we analysed the relationship between CO2 emissions (metric tons per capita) andGDP per capita (current US$), on the basis of time series data from World Bank from the period 1960-2014[2].

In the rest of the paper, Section 2 presents reviews of the literature workto check the existence of EKC Hypothesis in Indian Context. Section 3 explains the objective, methodology and discusses the study outcomes. Section 4 presents the conclusion of the research.

2. LITERATURE REVIEW

In the past, various studies have been done to examine the EKC Hypothesis in Indian Context. However, it is observed that the outcome is different in different studies and the reason is the choice of parameters.

Gambhir S. [3] has modelled EKCwith the variables i.e., GDP and CO2 emissions (aggregate and per capita) and alternative model specifications has also been used to bridge the gap between conventional and modern EKC literature.

The author has substantiated a cubic form of EKC in the Indian context for the time period 1991 to 2014. Aggregate CO2 emissions is taken as the dependent variable, and it is found that the linear, quadratic and cubic terms are all significant with the expected signs, which confirm an N-shaped EKC for India.

Sinha A. et al. [4] [5] have investigated and quantified the causal relationship between economic growth and environmental degradation through an empirical model Environmental Kuznets Curve (EKC). They analysed the relationship between Carbon Emission CO2 (per capita metric tons) and GDP (real net per capita in Rs). Using Kuznets original model, they concluded that CO2 emission growth rate is lower than GDP (real net per capita in Rs) growth ratein India after 1990which implies that India follows EKC.

Makrabbi G. [6] in their research work studied for the variables CO2 emission per capita, real GDP per capita, Energy consumption per capita and FDI inflows. They collected data relevant to India, from World Bank Development Indicators and World Energy Statistics database. They tested the existence of co-integration or long run relationship between variables using ARDL (Auto-Regressive Distributive Lag) bound test and for causality VECM (Vector Error Correction Model) Granger causality test. They also examined the existence of EKC hypothesis by employing OLS (Ordinary Least Square) regression. Their results indicated theexistence of long run relationship between CO2 emission per capita, GDP per capita, FDI inflows and energy consumption per capita. The causality result of VECM granger causality shows the bi-directional causality between CO2 emission per capita and FDI, CO2 emission per capita and energy consumption.Although their results are convincing but are contradictory to another researcher that EKC hypothesis i.e. inverted U-shaped curve does not exist between GDP per capita and CO2 emissionper capita in India's context.Hence, the authors suggested there may be cubic shape curve or N-shape curve.

Singh O.P. [7] et al. in their paper investigated the growth trend of CO2 emission from agriculture and tested the hypothesis of Environmental Kuznets Curve (EKC) for India over the period of 1971 to 2009. There was positive relationship between GDP per capita (current US$) and CO2 emission. Agriculture can play an important role in mitigation of GHGs. Some agricultural practices can absorb CO2 from the atmosphere and sequester carbon in the soil. According to their study the relationship between GDP per capita (current US$) and CO2 does not support the hypothesis of Environmental Kuznets Curve (EKC) i.e. inverted U shaped in India context.

Kanjilal et. al.[8] examined the cointegrating relationship between carbon emissions, energy use, economic activity and trade openness for India to test the EKC hypothesis in the context of possible regime shifts in the long run relationship of the underlying variables, for the time period 1971 to 2008. The threshold cointegration tests ascertained a long-run relationship between carbon emission, energy use, economic activity and trade openness with two endogenous structural breaks, which were attributed to the economic crisis of 1990-1991 and the external oil price shocks witnessed by India. The EKC hypothesis was validated for India and the elasticity of CO2 emissions with regard to energy use and per capita income was found to be high.

Jayanthakumaran et al. [9] examined the relationship between emissions, growth, energy use, trade and endogenously determined structural breaks for India and China to test for the existence of EKC over the period 1971 to 2007. The findings validated the EKC hypothesis for China and India. In case of China, a 1 per cent increase in per capita income led to a 1.62 per cent increase in per capita CO2 emissions and a 1 per cent increase in per capita income squared led to a 0.13 per cent decrease in per capita CO2 emissions. As far as India was concerned, a 1 per cent increase in per capita income led to a large 7.85 per cent increase in the per capita CO2 emissions and a 1 per cent increase in per capita income squared led to a 0.66 per cent decrease in the per capita CO2 emissions. India's heavy reliance on domestic production and consumption was cited as one of the reasons for the high level of emissions. With cumulative emissions (as against per capita emissions) as the dependent variable, EKC hypothesis was validated for China in the long run but no long run relationship was found for India.

3. OBJECTIVE OF STUDY

Null Hypothesis H0: There does not exist Environment Kuznet Curve in India.

To estimate shape of EKC in India by taking the parameters CO2 emissions (metric tons per capita) andGDP per capita (current US$)from World bank data for the time period 1961 to 2014.

4. METHODOLOGY AND EMPIRICAL OUTCOMES

This study investigates the impact of economic growth on the basis of GDP on CO2 emissions in India. To conduct the empirical analysis, we collected the data pertaining to India for years 1961-2014 from the World Bank database. We have used eViews for statistical and econometric analysis in this study. The details of the variables used is explained in Table I.

TABLE 1: Variables used in the study

Variable	Explanation	Source of Data
CO	CO2 emissions (metric tons per capita)	WBD
GDP	GDP per capita (current US$)	WBD
GDP2	Square of GDP per capita (current US$)	WBD

The Descriptive statistics and correlation analysis of the study variables is shown in Table II. It indicates that CO2 emission, GDP per capita, Square GDP and Cube GDP as per Jarque–Bera statistics are normally distributed. The correlations analysis describes that GDP per capita, Square GDP, Cube GDP are positively correlated with CO2 emission.

TABLE 2: Descriptive Statistics of study variables

	CO	GDP	GDP2	GDP3
Mean	0.722145	432.0614	346307.7	3.90E+08
Median	0.595940	303.0556	91842.70	27833447
Maximum	1.727671	1573.881	2477103.	3.90E+09

Minimum	0.267634	82.18860	6754.967	555181.3
Std. Dev.	0.396408	403.2204	626058.5	9.19E+08
Skewness	0.851438	1.600196	2.259401	2.616443
Kurtosis	2.733069	4.502245	6.826231	8.585031
Jarque-Bera	6.808626	28.64412	80.34495	134.2359
Probability	0.033230	0.000001	0.000000	0.000000
	CO	GDP	GDP2	GDP3
CO	1			
GDP	0.9497	1		
GDP2	0.8644	0.9683	1	
GDP3	0.8011	0.9248	0.9891	1

To test the hypothesis of EKC in Indian Scenario, the two forms of EKC is tested with Carbon emission as dependent variable and GDP, Square of GDP and Cube of GDP as regressor variables.

The first form of EKC is Quadratic Form represented as function form :

$CO2t = f(GDPt, GDP2t)$

And Estimating equation :

$CO2t = \alpha1 + \beta1\ GDPt + \beta2\ (GDP2)\ t + et1$ (1)

where

$\alpha1$ = intercept (initial level of CO2 per capita emissions)

$\beta1$ and $\beta2$ = indicators for testing the existence of a quadratic form of the relationship between CO2 emissions and GDP, that is, a quadratic EKC. The expected sign of $\beta1$ is positive while that of $\beta2$ is negative. If these coefficients turn out to be significant with these expected signs, it would confirm the existence of an inverted-U shaped relationship between aggregate CO2 emissions and GDP for India.

The final outcome after running OLSregression on the quadratic equation (1) is shown in Table III. From the results it is observed that coefficient of GDP, $\beta1$ is positive 0.00177, though the coefficient value is very small but significant. The coefficient Square GDP $\beta2$is negative -5.61 E-07 and also significant. The R-squared value 0.951 and Adjusted R squared value is 0.949 is very high. The Sum squared error of regression is also small, Hence the EKC quadratic model is said to be significant.

This concludes the existence of inverted U-shaped curve in India. Though the coefficient values of GDP are found to be very small, which depicts that GDP is not the only factor which contributes to the Carbon emission.

The final estimatedregression equation according to the output of the model is

$CO2 = 0.00177*GDP - 5.61134e-07*GDP2 + 0.1485$ (2)

TABLE 3: Regression output of Quadratic EKC Equation

Dependent Variable: CO		
Method: Least Square		
Variable	Coefficient	Prob.
GDP	0.001777	0.0000
GDP2	-5.61E-07	0.0000
C	0.148537	0.0000
R-squared	0.951039	
Adjusted R-squared	0.949156	
S.E. of regression	0.089385	
Prob(F-statistic)	0.000000	

The second form of EKC is Cubic EKC and is represented as function form:

$CO2t = f(GDPt, GDP2t, GDP3t)$

And Estimating equation

$CO2t = \alpha2 + \beta3\ GDPt + \beta4\ (GDP2)\ t + \beta5\ (GDP3)\ t + et2$ (3)

where

$\alpha2$ = intercept (initial level of CO2 emissions)

$\beta3$, $\beta4$ and $\beta5$ = indicators for testing the existence of a cubic form of the relationship between aggregate CO2 emissions and GDP, that is, a cubic EKC. The expected sign of $\beta3$ and $\beta5$ is positive while that of $\beta4$ is negative. If these coefficients turn out to be significant with these expected signs, it will confirm the existence of an N-shaped shaped relationship between aggregate CO2 emissions and GDP for India over the time period 1961 to 2014.

The outcome after running OLS regression on the cubic equation (3) is shown in Table IV.

From the results it is observed that coefficient of GDP $\beta1$ is positive 0.002478 and significant. The coefficient Square GDP $\beta2$is negative -1.84 E-06 is also significant and coefficient Cube GDP $\beta3$is positive 5.82 e-10 and significant. The R-squared value 0.958 and Adjusted R squared value is 0.956 is very high. The Sum squared error of regression is also small, Hence the EKC cubic model is said to be significant. This concludes the existence of inverted N-shaped relationship in India.

The final estimated regression equation according to the output of the model is

$$CO2 = 0.002478*GDP - 1.8433e\text{-}06*GDP2 + 5.820e\text{-}10*GDP3 + 0.062880 \quad (4)$$

TABLE IV: Regression output of Cubic EKC Equation

Dependent Variable: CO		
Method: Least Square		
Variable	Coefficient	Prob.
GDP	0.002478	0.0000
GDP2	-1.84E-06	0.0001
GDP3	5.82E-10	0.0033
C	0.062880	0.1131
R-squared	0.958730	
Adjusted R-squared	0.956302	
S.E. of regression	0.082866	
Prob(F-statistic)	0.000000	

To observe the graphical relationship between CO2 emissions (metric tons per capita) andGDP per capita (current US$), the scatter plot is shown in Figure 1. It shows the existence of positive correlation between economic growth and carbon emission in India.

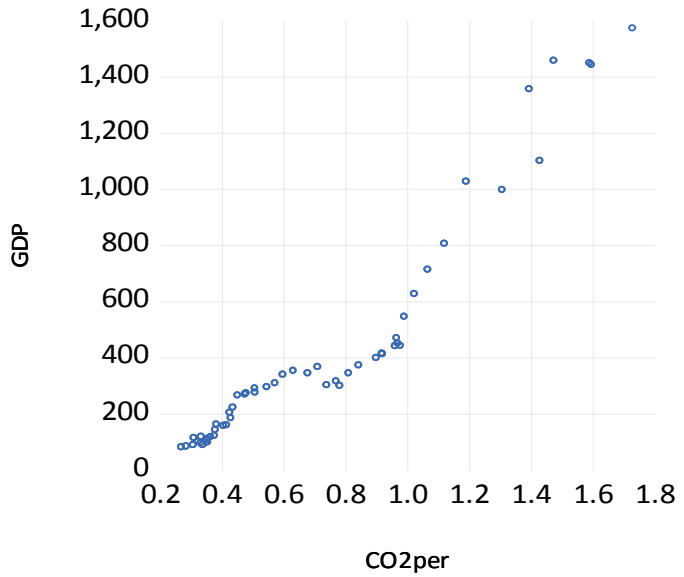

Fig. 1. Plot of GDP per capita and CO2 emission metric tons per capita

5. CONCLUSION

The study rejects the Null Hypothesis and concludes that there isan existence of inverted U-shaped and N shaped Kuznets curve in India though the coefficients are very small.

Hence, it shows that Economic growth itself cannot replace policies that seek to reduce the CO2 emission.

Therefore, government should develop and adopt appropriate policies to reduce the CO2 emission from various sources so that the global warming is declined and in turn public health challenges are reduced.

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Employer Branding Through Social Media Marketing: Bridging the Gap between Marketing and Human Resource

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Abstract: ***In order to attract the right candidates, the organisations must focus on branding themselves. Organisations need to create a strong identity and positive image in the corporate landscape. Hiring is getting more competitive every day. Employer branding then is defined as a company's ability to differentiate and promote this identity to a defined group of candidates that they're interested in hiring. To be successful, organizations need to attract the most suitable employees available in the job market. The concept of brand proposition is equally useful in creating the right employer proposition. Employer branding must focus on creating and delivering the message on employer's selling points, why and how this is best place to work. It must be appealing to the right kind of talented people and also give a competitive advantage to the organisation over its competitors. With social media platforms maturing in lives, blurring the virtual and real lives of people and even organisation, there is manifold increase in efforts to gain distinctive identity. Digital marketing involves efforts to create the right corporate image. How can we develop the right employer branding strategy, with the use of social media platforms? What are dimensions of this strategy? How does it act as the link between marketing and HR. Along with finding answers for these broad questions, and understanding the various dimension of the concept, this paper is an attempt to identify the primary objectives of employer branding, and test the success of this strategy on employee's satisfaction, affinity, loyalty and perceived differentiation.***

Keywords: ***Brand, Employer branding, Value proposition, Competitive advantage, Strategic management***

1. INTRODUCTION

A brand is a symbol that encapsulates the many associations that are made with a name (Gardner and Levy, 1955) and many things can be branded (Levitt, 1980), including the company itself, but is the role and effect of the employer brand similar to that of the brand in its usual context, that of influencing customers? Branding was originally used to differentiate tangible products, but over the years it has been applied to differentiating people, places and firms (Peters, 1999). The term *"Employer Brand"* was first used in the early 1990s to denote an organization's reputation as an employer. From the organisation's perspective, the employer brand sums up the key qualities current and prospective employees identify with you as an employer, whether economic (compensation and benefits), functional (e.g. learning new skills) or psychological (e.g. sense of identity and status). Minchington (2010) defines employer brand as "the image of your organisation as a 'great place to work'. Employer branding is creating this image. When considering customers, a brand provides its owner with two benefits: differentiation, so that the customer is less able to decide on price alone and a franchise (Davies, 1992), the latter stemming from customer satisfaction with the brand and loyalty to it.

Customers choose to purchase for rational reasons but their emotional attachment is also important. These four attributes of a brand – the ability to differentiate, to create loyalty, to satisfy and to develop an emotional attachment – are, it is argued, also relevant to the employer brand. The effects of a brand are often referred to as its 'equity, rooted in the customer's knowledge about the brand. Ambler and Barrow (1996) have defined employer branding as the development and communication of an organization's culture as an employer in the marketplace. It is the package of functional, economic and psychological benefits provided by employment, and identified with the employing company. It conveys the "value proposition" - the totality of the organization's culture, systems, attitudes, and employee relationship along with encouraging your people to embrace and share goals for success, productivity, and satisfaction both on personal and professional levels.

2. REVIEW OF LITERATURE

In the words of Milan (2010) " Attracting and retaining the best talent, the core scope of employer branding, has always been one of the main preoccupations of managers operating in boom times as well as in what has been called the Great Recession". Employer branding has moved into the field of Human Resources from the discipline of marketing for highlighting the positioning of a company as an employer. In

principle, brands can be seen as a set of symbols which represent a variety of ideas and attributes, the net result of which is the public image, character or personality of an organization. As such, branding activities involve constructing particular attributes (e.g. the values on an organization) that are considered to represent the image that a company wishes to communicate to potential employees, current staff and the public. The 'customer' here is the 'employee/potential employee', while the aim remains the same: attracting new customers while retaining the current ones. Also, just like a consumer brand, the employer brand highlights the emotional and rational benefits that the employer provides to the employees.

Employees are becoming central to the process of brand building and their behavior can either reinforce a brand's advertised values or, if inconsistent with these values, undermine the credibility of advertised messages. It is therefore important to consider how employees' values and behavior can be aligned with a brand's desired values (Harris & de Chernatony (2001). Internal branding, according to Bergstrom *et al*. (2002), refers to three things: communicating the brand effectively to the employees; convincing them of its relevance and worth; and successfully linking every job in the organisation to delivery of the 'brand essence'. Coca-Cola's renowned former chief marketing officer, Sergio Zyman (2002) concurs: 'Before you can even think of selling your brand to consumers, you have to sell it to your employees.' He goes on to argue that how a brand is positioned in the minds of consumers is heavily dependent on a company's employees. It is worth noting that the first conference on 'internal branding' was recently held in Chicago.

The employer brand is the package of psychological, economic, and functional benefits provided by employment and identified with an employer (Thorne 2004). Manipulating these benefits to position the firm in the minds of potential employees as a great place to work (an employer of choice) is the role of employer branding (Branham 2001).

Employer brand comprises a series of dimensions characteristic to commercial branding: Employer branding creates two principal assets – brand associations - shape the employer image that in turn affects the attractiveness of the organization to potential employees; and brand loyalty - through organizational culture and brand identity (Backhaus & Tikoo, 2004); Employer branding represents an effective strategy for motivating employees to <live the brand> and it represents what makes an organization attractive to its current and future employees (Maxwell & Knox, 2009) Employer brand represents brand-led culture change and customer experience management: a robust mechanism for aligning employees 'brand experience with the desired customer brand experience, as a common platform for marketing and HR (Mosley, 2007). From HR perspective, "*employer branding, involves identifying the unique "employment experience" by considering the totality of tangible and intangible reward features that a particular organization offers to its employees*" (Edwards, 2010) This is often defined as "*employee value proposition*" and it comprises the functional and economic benefits such as salary & remuneration policy, working environment, career development, organizational learning and psychological benefits such as job satisfaction or reputation (App, Merk & Buttgen, 2012). Hence, employer branding has become a strategic instrument for HR in the battle for talent acquisition and retention, helping employees to internalize company values and organizational culture (Sathya & Indradevi, 2014)

William Rothwell (2008) indicates that in order to attract youngsters with high potential, talent management programs should comprise the following dimensions:

1) ***Get commitment*** on behalf of senior managers and employees – talent management implies employees with technical expertise - career double scale; dissemination of information and knowledge - management succession planning; mentoring for prospective successors;

2) ***Analyze the Work and the People now—and determine What Talent Means -*** Analyzing the work is accomplished through systematic work analysis, carried out to prepare current job descriptions that realistically summarize work requirements. Analyzing the people is carried out by competency modeling, which profiles successful performers at every level and/or in every department of the organization. Determining what talent means requires organizational leaders to establish criteria for talent - individuals who are doing a good job where they are and are also promotable are called high potentials (HiPos); individuals who are the most productive of anyone doing a job are high performers (HiPers); and individuals who are the most knowledgeable about a specific area of the organization's work are high professionals (HiPros).

3) ***Recruit and Select Talent -*** In a robust talent management program, recruiting and selecting talent from outside is full, seamlessly integrated with developing talent from inside the organization. At present, the most important tools in recruiting focus on digital and employment branding;

4) ***Evaluate Performance -*** Employees must be evaluated based on the results they achieve (current productivity) and on the competencies and behaviors they demonstrate;

5) ***Analyze the Work and People required in future -*** organizational leaders take the time to forecast work requirements and the competencies that will be needed in the future if the talent management program is to align with the organization's strategic objectives. Indeed, an organization's strategic objectives imply the kind of work to be performed, the key performance indicators (KPIs) that will be required in the future, and the kind of personal characteristics (competencies) essential to success.

6) **Evaluate Potential-** Common ways to assess potential include supervisory nominations, 360-degree assessment based on the competencies required for higher levels of responsibility (not the current level), assessment centers, psychological tests, work assignments/rotation experiences.

7) ***Develop People*** **-** Potential assessment is carried out to assess individuals against future requirements at higher levels. Then, individual development plans (IDPs) are used to close developmental gaps by finding actionable strategies to build requisite competencies; organizations establish leadership development programs, action-learning programs, training programs, rotation experiences, mentoring programs, and other planned efforts to narrow gaps.

8) ***Retain the Best People*** **-** organizational leaders are well advised to start by interviewing employees about why they stay. It is particularly important to know why HiPos, HiPers, and HiPros stay, since awareness of their reasons for staying can shape themes for future recruitment. It can also suggest areas of focus improve retention efforts.

9) ***Evaluate Program Results*** **-** Increasingly companies are allocating funds to what has been termed the employee or employer brand, i.e. the set of distinctive associations made by employees (actual or potential) with the corporate name. A strong employer brand attracts better applicants (Collins and Stevens, 2002; Slaughter et al., 2004) and shapes their expectations about their employment (Lievens and Highhouse, 2003). What is less clear is the role of branding with existing employees, the focus for this paper. A brand is a symbol that encapsulates the many associations that are made with a name (Gardner and Levy, 1955) and many things can be branded (Levitt, 1980), including the company itself, but is the role and effect of the employer brand similar to that of the brand in its usual context, that of influencing customers? This paper identifies the roles that the employer brand might be expected to play, the roles that are relevant to a corporate brand and to employees: creating (employee) satisfaction, affinity and loyalty and perceived differentiation.

Organisations increasingly recognise that they cannot take the commitment and loyalty of their employees for granted. Despite the desire to ensure that employees are broadly satisfied with their working conditions, it has largely been taken for granted that if given a decent job people will gratefully do your bidding. Leading companies are fast realising that valued employees, like profitable customers, are free to make choices, to join, to engage, to commit, and to stay. They are also beginning to realize that to attract the right kind of people, to encourage them to remain loyal and to perform to the best of their abilities requires a far more focused, coherent and benefit-led approach than companies have been used to providing. Given the long term trend for organisations to treat their valued employees more like valued customers, the need is to sharpen up the way in which they manage the brand that these people work for – the employer brand. The three major benefits of strengthening employer brand identified in separate studies conducted by Hewitt Associates, The Conference Board and The Economist are cited as being:

- Enhanced attraction
- Retention
- Engagement

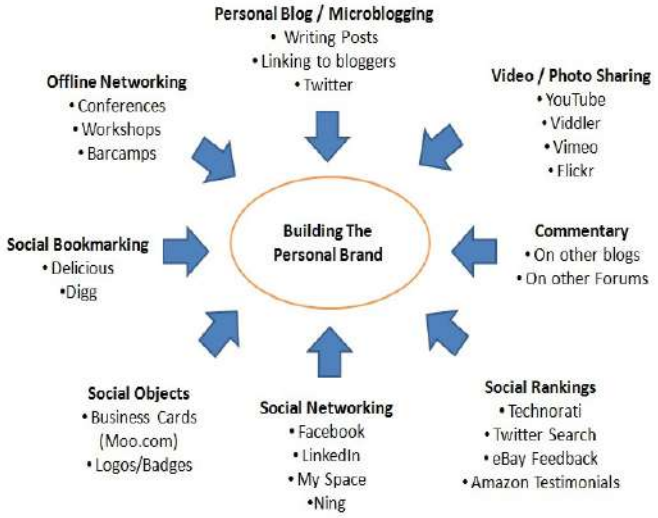

Fig. 1. Media and Options for Personal Branding

Employer branding provides an effective commercial bridge between HR, internal communications and marketing. Most businesses have woken up to the vital importance to the business of recruiting, retaining and developing the right people. The service sector, particularly, has woken up to the fundamental importance of engaging employee commitment in delivering customer satisfaction and loyalty. The growing commercial emphasis of these activities is bringing HR and internal communication practice increasingly in line with the approaches and disciplines more commonly applied to the creation and delivery of external value, namely marketing and brand management.

Employer branding draws on a discipline that has proven lasting value in the marketplace. Branding and brand management have evolved over time, but the central tenets of the discipline: close attention to the needs and aspirations of the target audience; focus on benefits; competitive differentiation; and the marshalling of a coherent and consistent brand experience are as central to brand management today as they have ever been. The foremost reason why employer branding is here to stay is that in driving and sustaining people's commitment and loyalty there has been no more effective approach than brand management. Employer branding is the message on "*what are employer's unique selling points and why employer's workplace is appealing to talents."* In the absence of a clearly defined

strategy, employer brand strategy is likely to fall flat. Taking a strategic approach to employer brand program is likely to result in CEO/senior management engagement and allocation of the resources required to effectively build competitive advantage like companies such as Google, PWC, and McKinsey & Co have consistently achieved over time and that regularly rank highly as 'best places to work.'

Research Methodology: To have a clearly defined strategy is the most important factor in achieving employer branding objectives. Employer brand is "the image of organization as a '*great place to work'* in the mind of current employees and key stakeholders in the external market (active and passive candidates, clients, customers, and other key stakeholders)." Employer branding is therefore concerned with the attraction, engagement, and retention initiatives targeted at enhancing your company's employer brand.

1. To understand the concept and dimensions of employer branding.
2. To understand the strategies used by various organisation for employer branding
3. To understand the role of technology in success implementation of employer branding strategies.

Influencing candidates to join the company requires a targeted recruitment strategy and communications approach according to a wide-ranging new survey from Employer Brand International (EBI). The "Influencers of Employment Choice Global Research Study" surveyed more than 2000 companies and over 400 employees worldwide on what influences their employment choice. The results of the global study should be a concern for CEOs where money invested in employer branding initiatives may be misdirected and/or misaligned with the business strategy. Most companies are in the early stages of developing an employer brand strategy that builds competitive advantage (globally only 16% have a clearly defined strategy), so the survey results provide some important guidance for leaders to ensure their investments are focused on priority areas. Figure 1 shows the objectives of employer brand strategy and its growing importance.

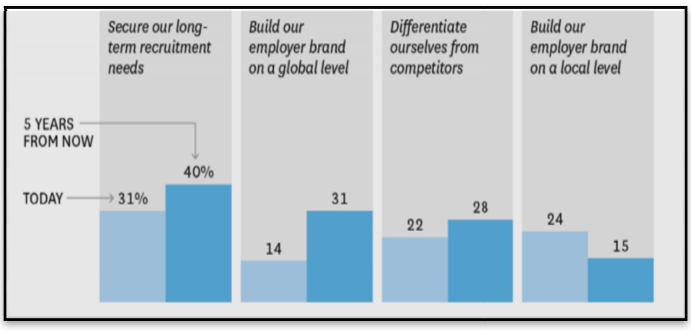

Fig. 2. Major Objective of employer branding and growing importance

(Source: The future of employer branding. www.hbr.com)

A study conducted by the Corporate Leadership Council in 2006 concluded that strong employer brands provided access to 20% more of the potential talent market than weak or unmanaged employer brands. Also companies with a strong employer brand reputation were able to attract candidates away from their current employers with a significantly lower increase in compensation (11%) than companies with a weak employer brand reputation (21%).

Leading employers often make use of a wide variety of qualitative and quantitative research techniques, including:

- Labour market mapping (where can we best find and target potential candidates).
- Attraction analysis (what are people looking for from potential employers).
- External image research (how do people regard us in relation to other employers).
- Joiners survey (what expectations do new joiners have and are we meeting them).
- Employee engagement surveys (how engaged are our current employees).
- Engagement driver analysis (what is drives employee engagement in our company).
- Segmentation (how much do employee needs and aspirations vary from group to group).
- Appreciative inquiry (what characterizes our organization at its best? What makes us distinctive).
- Best practice benchmarking (how do our current HR practices compare with other leading companies).

Forrester Research suggests it takes up to 8 brand touch points to influence a consumer decision, a touch point is just a fancy word for any interaction that someone has with your company. People rarely arrive at your website ready to buy or ready to apply. As recruitment blogger extraordinaire **Matt Charney** puts it, candidates are thinking about applications in the same way as they consider buying decisions. They want to be able to educate themselves about your company. They invest time in researching your company, product or role before deciding whether it's a good fit for them. Content is extremely important during this awareness and education stage. It gives candidates the ammunition they need to learn about your employer brand and plays a crucial role in their decision to apply.

The survey also found while 31% have a strategy, it can be developed further. Importantly, 37% of companies have already begun work on developing their employer brand strategy. A small percentage of respondents (13%) said their company does not have an employer branding strategy (Figure 2). These companies may be in the early stages of developing a business case for investment or the department responsible for

managing the employer brand may be having difficulty engaging the CEO and senior managers to allocate resources toward the strategy. Research study investigated the "Influencers of Employment Choice", specifically, which of 15 employer brand attributes have the strongest influence on why employees choose to join an organization over another. The report includes global segmented results for gender, age, organization type, country, position in company and tenure. Employer branding used to be exclusively an offline activity practiced in many ways including through job fairs, advertising, marketing and internal newsletters. Companies are still passing on the same type of information to current and prospective employees only now they are increasingly doing it through their website. Research results from more than 400 respondents show that 95% of job seekers use corporate websites before deciding whether to apply for a job as shown in figure 3.

3. FINDINGS AND DISCUSSION

Companies have different lifecycle stages and therefore will have different objectives at various stages. Objectives may be related to the whole employer brand program or a specific employer brand project (e.g. establishing an alumni program or employee referral program). Objectives may include integrating the cultures of two companies during a merger, decreasing staff turnover rates, increasing volume of hires for a summer recruiting campaign, improving candidate quality, or reviewing and updating career website to appeal to graduates.

1. If employer branding is only about recruitment, it is likely that organization will have already closed up shop on employer branding as a result of the economic downturn while competitors who understand the concept are continuing to invest resources as part of a long-term employer branding strategy to attract and retain talent. Harris[7] considers the main components of employer branding as employee engagement, employee communication, training and development, and external reputation[7].
2. The key to developing employer brand strategy is to arrive at a comprehensive understanding of the organizational culture, work experience, key talent drivers (engagement factors), external perceptions, leadership vision, and management practices. In this era of increasing transparency, the organization's external reputation can be considered through both external focus groups and/or some level of online reputation audit to determine 'what is being said' about the organization via web channels (blogs, social networks).
3. Competition for talent is heating up in many industries. For a company to exploit its brand effectively when it fishes for talent, it must think of recruits as customers, determine which corporate attributes matter most to specific types of recruits, and understand how best to reach them. As observation, many companies are attracting talents by offering higher salaries and bonuses only. Companies should also relentlessly train and upgrade their leaders, making them the "reasons" why a talent would want to work for and in also determining "why a talent joins you and why a talent leaves you"?
4. Engaging the CEO and senior management in the benefits of employer branding also ranks highly. Surprisingly, conducting internal and external market research ranked the lowest in importance, suggesting companies are rushing into employer branding without a clear direction of where they are heading. The Employer Brand Institute's global survey found engaging with these key stakeholders is very important in achieving employer branding objectives and could be conducted using a roundtable forum on employer branding.
5. Job seekers use corporate websites not only to apply for jobs and find basic information about a company, but increasingly also as the primary spot where they expect to be informed about details on everything from training programs to job mobility, vacation policy and compensation. The fundamental role played by the corporate website is all the more evident considering that most people don't have somebody on the inside that they can turn to for information.

   Other key findings of the global research survey include:

   a. Being rewarded for performance decreases in strength of influence of employment choice as age increases.
   b. Working for a company that provides a high level of customer service increases in influence of employment choice as age increases. It is nearly 5 times as strong an influence for 50+ years compared to 18-29 years.
   c. A friendly working environment is also a stronger influencer of employment choice for younger age groups and declines with age (nearly 3 times stronger for 18-29 years compared to 50+ years).
   d. The opportunity to work with thought leaders is nearly twice as strong an influence of employment choice for employees in the private sector compared to government.
   e. Working for a company with inspiring leadership is three times a stronger influence for employees in the private sector compared to not-for-profit and government employees.

The results of the research assist to inform and guide organisations in their talent attraction and retention practices.

4. CONCLUSIONS

"Businesses must balance the past and the future…the benefits of free agency and control…efficiency and innovation".

-Ulrich

Understanding the explicit needs and aspirations of employees is a good starting point but it is not enough to ensure an effective brand strategy. Employer branding is the response of Human Resources Management to the particular market circumstances. There is a need to develop an understanding of employees' implicit needs, and the organisational, cultural and labour market context within which the employer brand will operate. There is significant evidence to suggest that a strong employer brand associated with stronger attraction and higher than average levels of employee engagement, will ultimately contribute to better financial results. To strengthen the employer brand it is important to understand not only the immediate 'climate' of employee opinion, but also the longer term culture of the organization.Thus, Employer branding ensures that the best employees stay on longer, thus allowing the company to carry on its operations smoothly. Ultimately, the key to a successful employer brand is to ensure that expectations are fully aligned with the realities of working for the organization. "In recruiting today, it's not only recruiters who are doing the research. With 85% of job searches starting with a search engine, top talent is searching for a company the same way they would any other purchasing decision – which is why employer branding is so critical." - Matt Charney, Executive Editor at Recruiting Daily

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An Analytical Study of Mobile Internet User in India

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Abstract: Indian economy is the fast growing economy. India is the fifth largest economy and third largest economy on the basis of purchasing power parity (PPP) in the world. India is the second largest country followed by China in the population and access of internet in the world. Telecom industry covers whole area of country and connects different parts of India through phone and internet. Internet helps to expand the productivity and competitiveness. In this paper we will study the growth of mobile internet in India through the correlation, mean, chart and growth rate methods.

Keywords: Mean analysis, ACGR, internet, Indian economy, telecom industry, subscription rate, Tele-density, penetration etc.

1. INTRODUCTION

Mobile internet plays a dominant role in the development of Indian economy. In the present scenario internet is a necessity for the development of any economy. Internet is an essential tool for development of country on the whole by contributing towards immense growth, quick connecting of different sector of economy. Mobile internet has grown greatly during the past decade. It is beneficial for everyone and has positive effects on entire economy. Mobile internet is key instrument for the development of rural areas as well as urban areas.

India is the second largest smart phone market in the world and will have almost one billion unique mobile subscribers by 2020. In 2020 internet user in India has increased 700 million across the countary. Revenues from the telecom equipment sector are expected to grow to US$ 26.38 billion by 2020. Contribution of mobile industries in GDP may be increase to 8.2 percent, presently it contributes 6.5 percent to GDP. This report also said that the mobile industry will add 800000 more jobs. In terms of unique mobile phone subscribers, India is expected to cross the one billion. India is witness an increase and adoption of 4G services. Number of 4G connections grow to 280 million in Dec. 2020 from 3 million in 2015.

In 2020 due to crona virus whole world is suffering from Pandemic and growth rate of GDP in India has declined 23.98 percent. It came in negative growth. At present 696.77 million people are using the internet. It is estimated that upto 2025, 974.86 million people will be internet user in India. India comes in top 20 internet user countries. In 2018 out of 100 people 38 were using the internet. While in the same time period in whole world out of 100 people 51 people were using the internet. Highest number of people out of 100 people 80 people in Europe were using the internet while lowest number 24 people out of 100 people were using the internet in Africa in same time period. Due to work from home use of internet is increasing more and more in Pandemic. According to 2019 tele-density of internet user per 100 in India was 90.10 and mobile internet user was 88.45 per 100 people.

2. REVIEW OF LITERATURE

According to Department of Industrial Policy and Promotion and the Department of Telecom, the contribution of mobile industry to country's GDP will be increase to 8.2 percent by 2020, presently which contribution 6.5 percent to the GDP. This report also said that the mobile industry will add 800000 more jobs. In term of unique mobile phone subscribers, India is expected to cross the one billion mark by 2020. India will witness an increase in adoption of 4G services with number of 4G connections estimated to grow to 280 million by 2020 from just 3 million in 2015.

According to M. Prabu and R. Manoov in their study 'Analyzing the impact of Internet in rural India' found that, rural internet growth is not related to urban internet growth. Study found that, as rural subscriber rate increases the rural internet growth also increase. Study also found that urban internet users mostly use wireless mode to access internet.

Kathait and Singh, 2014 found their report that more teenagers are attracted towards internet and the reasons are;

(a) Students have huge blocks of unstructured times,

(b) Schools and universities provide free and unlimited access to the internet,

(c) Students from the ages of 18-22 years are for the first time away from parental control without anyone monitoring or censoring what they say or do online.

(d) Young students experience new problems of adapting to university life and finding new friends, and often end up seeking a companionship by using different applications of the internet.

(e) Students receive full encouragement from faculty and administrators in using the different internet applications.

(f) Adolescents are more trained to use the different applications of technological inventions are more trained

to use the different applications of technological inventions and especially the internet.

(g) Students desire to escape university sources of stress resulting from their obligations to pass exams, compose essays and complete their degrees in the prescribed time with reasonable marks, and finally

(h) Students feel that university life is alienated from social activities, and when they finish their studies, the job market with all its uncertainties is a field where they must participate and succeed in finding employment.

According to Sandhya Keelery, July 7 2020, in the report 'Internet usages in India- Statistics & Facts' found that data usage per smartphone per month will triple 21 EB per month (one billion GB) by 2025. On an average Indian used around 12 GB data monthly. It is highest consumption globally. It is projected that use of data by 2025 may be increased around 25 GB per month.

3. RESEARCH METHODOLOGY

Present study is based of secondary data. Data has been collected from TARI & Telecom Statistics India 2019. We analysis the data through chart, mean value, growth value, percentage methods and correlation methods etc.

CAGR= Compound Annual Growth Rate

$CAGR = (end/start)^{1/n} - 1$

$CAGR = (Current\ Value / Base\ Value)^{1/n} - 1$

n= number of years

End= Current Value

Start= Base Value

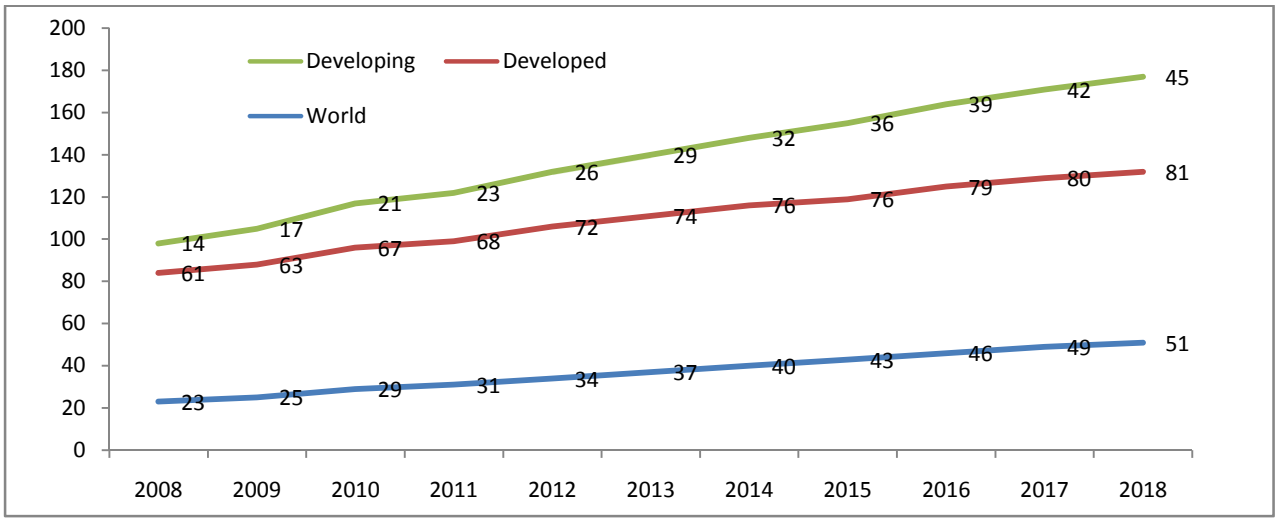
TABLE 1: Individual mobile Internet User in World per 100 People from 2008 to 2018

Year	World	Developed	Developing	India	Africa	Arab States	Asia & Pacific	CIS	Europe	America
2008	23	61	14	7	4	19	16	21	57	44
2009	25	63	17	11	5	21	19	24	60	46
2010	29	67	21	16	7	24	22	36	63	49
2011	31	68	23	34	8	27	25	43	65	51
2012	34	72	26	39	10	30	28	54	67	55
2013	37	74	29	13	12	33	31	59	71	56
2014	40	76	32	20	14	36	34	62	72	58
2015	43	76	36	24	18	40	38	63	74	62
2016	46	79	39	27	20	43	41	66	76	65
2017	49	80	42	33	22	49	44	69	77	68
2018	51	81	45	38	24	55	47	71	80	70
Mean	37.09	72.45	29.45	12.82	13.09	34.27	31.36	51.64	69.27	56.73
Total	408	797	324	262	144	377	345	568	762	624
CAGR	7.5	2.61	11.19	16.62	17.69	10.14	10.29	11.71	3.13	4.31

Source: TARI& Telecom Statistics India 2019

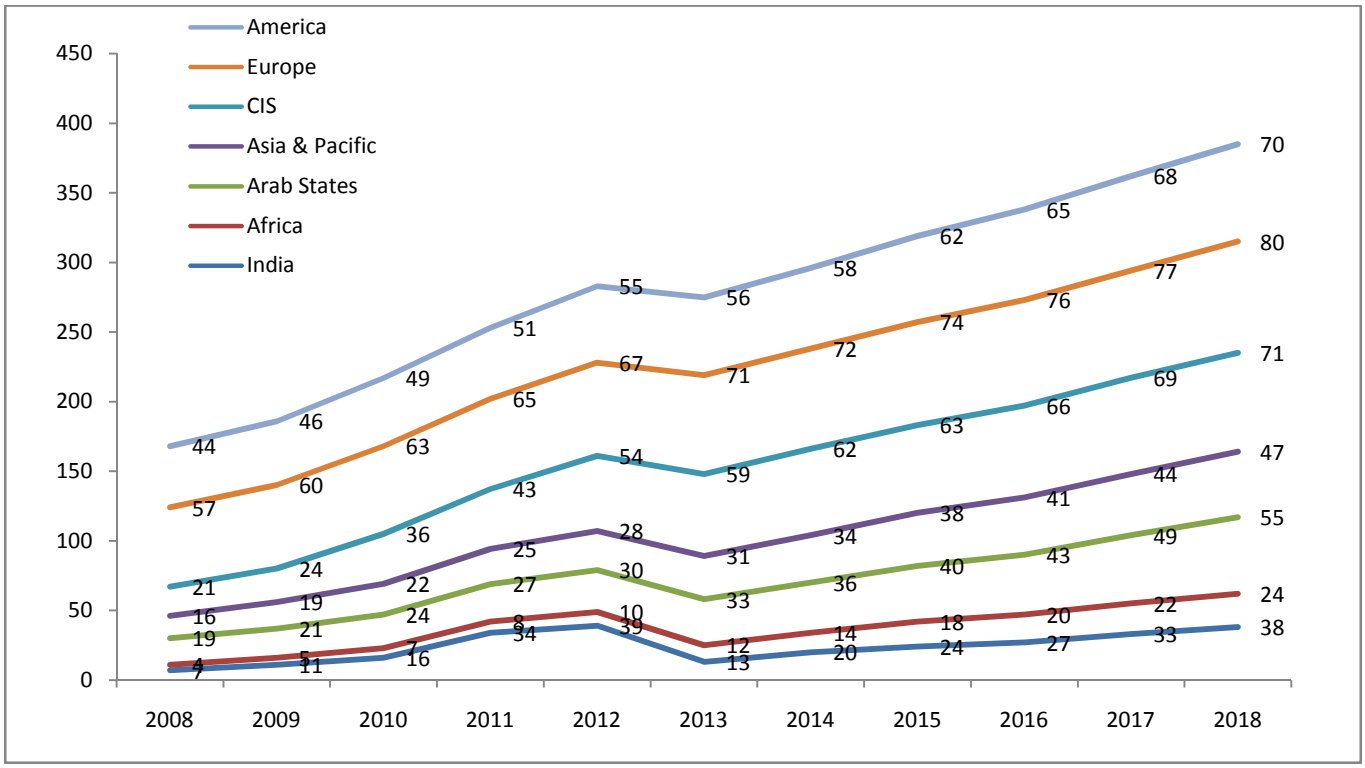
Table no 1 shows that mean value of individual mobile internet user during the study period is highest in Europe (69.27) and lowest in the India (12.82). Mobile internet user per 100 in the developed countries is 2.46 time greater (72.45) that developing countries (29.45) during the study period. Study also shows that during the study period CAGR highest in Africa (17.69%) followed by India (16.62%). CAGR in world, developed countries and developing countries found 7.5%, 2.61% & 11.19% respectively.

Chart No1: Individual Mobile Internet User in World per 100 People from 2008 to 2018.



Source: TARI& Telecom Statistics India 2019

Chart No2: Individual Mobile Internet User in World per 100 People from 2008 to 2018



Source: TARI& Telecom Statistics India 2019

TABLE 2: Number of Mobile internet users in India from 2015 to 2020 with a forecast until 2023 (in Millions)

Year	Internet User	Mobile Internet User	Social Network User	Facebook User
2015	302.36	242.92	142.23	135.6
2016	342.65	281.81	168.10	165.57
2017	422.20	361.60	296.30	248.3
2018	493.96	390.90	326.10	281.0

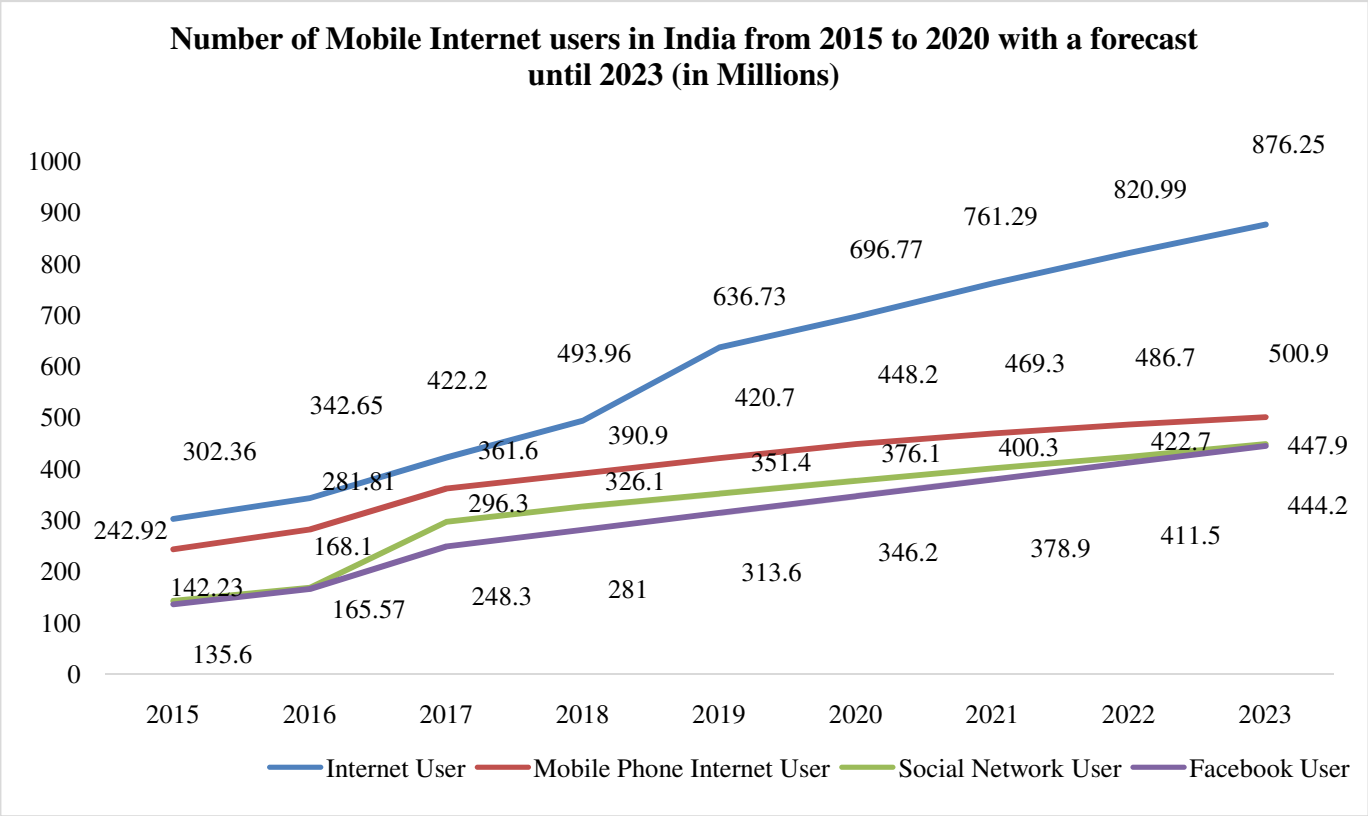
Year	Internet User	Mobile Internet User	Social Network User	Facebook User
2019	636.73	420.70	351.40	313.6
2020	696.77	448.20	376.10	346.2
2021	761.29	469.30	400.30	378.9
2022	820.99	486.70	422.70	411.5
2023	876.25	500.90	447.90	444.2
Mean	594.8	400.34	325.68	302.76
CAGR	12.55	8.37	13.59	14.09

Source: TARI& Telecom Statistics India 2019

NA: Data not Available.

Table no 2 shows that CAGR of internet user, mobile internet user, social network user and face-book useris 12.55%, 8.37%, 13.59% & 14.09% during the study period respectively.

Chart No 3: Number of Mobile internet users in India from 2015 to 2020 with a forecast until 2023 (in Millions)



Source: TARI & Telecom Statistics India 2019

TABLE 3: Area-wise & Sector-wise No of Internet User in India from 2008 to 2019 (In Millions)

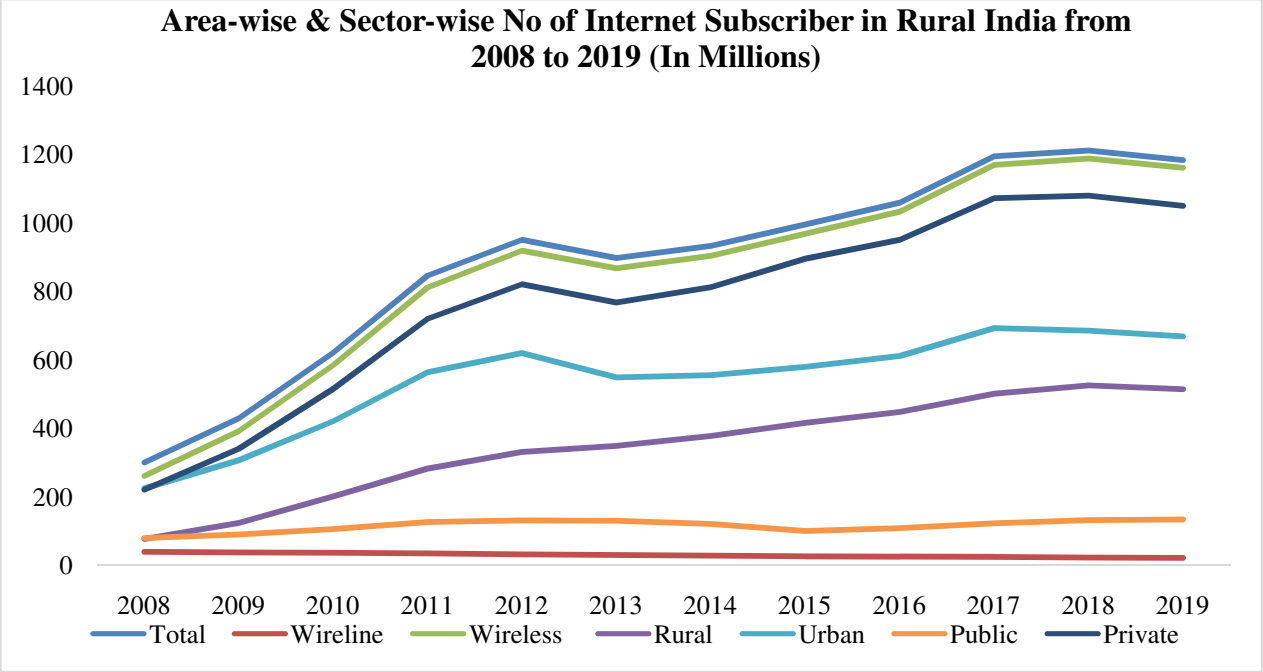
Year	No of Phone	Wireless	Wireline	Urban	Rural	Public	Private
2008	300.49	261.08	39.41	223.99	76.50	79.55	220.94
2009	429.72	391.76	37.96	306.21	123.51	89.55	340.18
2010	621.28	584.32	36.96	420.51	200.77	105.87	515.41
2011	846.33	811.6	34.73	564.04	282.29	126.00	720.33
2012	951.35	919.18	32.17	620.52	330.83	130.27	821.08

Year	No of Phone	Wireless	Wireline	Urban	Rural	Public	Private
2013	898.02	867.81	30.21	548.80	349.21	130.11	767.91
2014	933.02	904.52	28.50	555.23	377.78	120.05	812.96
2015	996.13	969.54	26.59	580.05	416.08	100.34	895.79
2016	1059.33	1034.11	25.22	611.56	447.77	108.65	950.68
2017	1194.99	1170.59	24.40	693.18	501.81	122.18	1072.81
2018	1211.80	1188.99	22.81	685.93	525.87	131.66	1080.14
2019	1183.14	1161.71	21.70	669.14	514.27	133.51	1049.90
Mean	885.47	855.42	30.06	539.93	345.56	114.81	770.68
Total	10625.6	10265.0	360.66	6479.16	4146.69	1377.74	9248.13
CAGR	12.10	13.25	-4.85	9.55	17.21	4.41	13.87

Source: TARI & Telecom Statistic India 2019.

Table no 3 depicts that CAGR of no of phone, wireless, urban, rural, public and private is 12.10, 13.25, 9.55, 17.21, 4.41 & 13.87 percent during the study period respectively. While during the same time period CAGR of wireline is negative (-4.85%).

Chart No 4: Area-wise & Sector-wise No of Internet Subscriber in India from 2008 to 2019 (In Millions)



Source: DOT compiled data, TARI & Telecom Statistic India 2019.

TABLE 4: Areawise & Sectorwise Tele-density of Internet User in India from 2008 to 2019 (per 100)

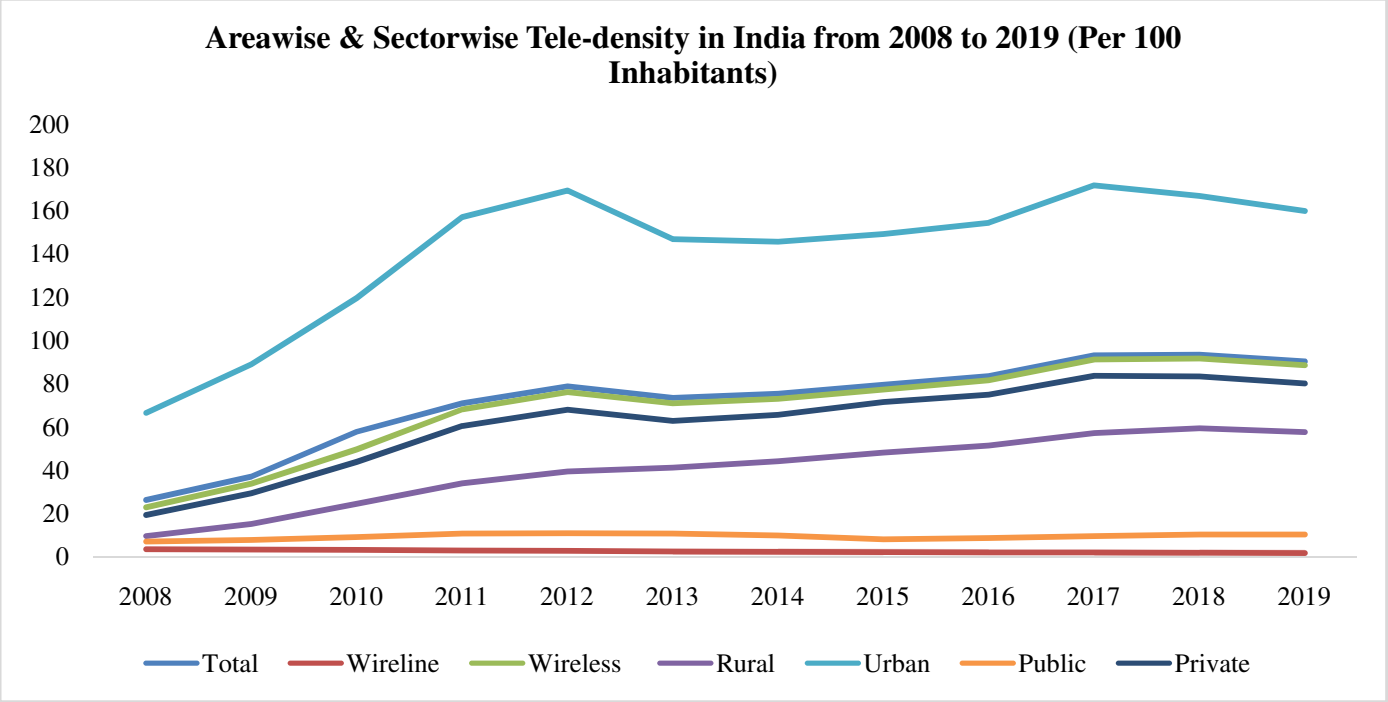
Year	Tele-density	Wireless	Wireline	Urban	Rural	Public	Private
2008	26.22	22.78	3.44	66.39	9.46	6.94	19.28
2009	36.98	33.71	3.27	88.84	15.11	7.71	29.27
2010	52.74	49.60	3.14	119.45	24.31	8.99	43.75
2011	70.89	67.98	2.91	156.93	33.83	10.55	60.34
2012	78.66	76.00	2.66	169.17	39.26	10.77	67.89
2013	73.32	70.85	2.47	146.64	41.05	10.62	62.69

Year	Tele-density	Wireless	Wireline	Urban	Rural	Public	Private
2014	75.23	72.94	2.30	145.46	44.01	9.68	65.55
2015	79.36	77.24	2.12	149.04	48.04	7.99	71.36
2016	83.40	81.41	1.99	154.18	51.26	8.55	74.85
2017	93.01	91.11	1.90	171.52	56.98	9.51	83.50
2018	93.27	91.51	1.76	166.64	59.25	10.13	83.14
2019	90.10	88.45	1.65	159.66	57.50	10.16	79.94
Mean	71.10	68.63	2.47	141.16	40.01	9.30	61.80
Total	853.18	823.58	29.61	1693.92	480.06	111.6	741.56
CAGR	10.83	11.97	-5.94	7.59	16.23	3.23	19.69

Source: TARI & Telecom Statistic India 2019.

Table no 4 depicts that CAGR of Tele-density, wireless, urban, rural, public and private is 10.83, 11.97, 7.59, 16.23, 3.23 & 19.69 percent during the study period respectively. While during the same time period CAGR of Wireline is negative (-5.94%).

Chart No 5: Areawise & Sectorwise Tele-density of Internet User in India from 2008 to 2019 (Per 100 Inhabitants)



Source: TARI & Telecom Statistic India 2019.

TABLE 6: Service Area wise no of Internet Subscriber in India from 2008 to 2019 (In % age & Tele-density per 100)

	% age Share			Tele-density Per 100	
Name	Total	Urban	Rural	Total	Urban
Andhra Pradesh	6.82	7.33	7.57	80.98	161.83
Assam	1.65	1.22	2.36	47.53	131.83
Bihar	6.5	5.41	8.65	39.58	149.86
Gujarat	5.97	6.13	5.87	84.76	129.74
Haryana	2.32	2.05	2.84	75.45	118.10
Himachal Pradesh	0.87	0.53	1.43	110.79	362.21

	% age Share			Tele-density Per 100	
Name	**Total**	**Urban**	**Rural**	**Total**	**Urban**
Jammu &Kashmir	0.88	0.79	1.05	65.59	127.60
Karnataka	6.12	7.00	4.65	87.34	160.98
Kerala	3.95	3.44	5.01	95.28	204.07
Madhya Pradesh	5.77	5.62	5.96	51.36	111.06
Maharashtra	7.92	7.13	9.36	72.09	111.36
North East	0.97	0.89	1.12	38.61	143.50
Odisha	2.65	2.02	3.70	57.80	152.32
Punjab	3.47	3.58	3.43	98.86	148.10
Rajasthan	5.52	4.64	7.07	68.71	146.69
Tamil Nadu	7.71	9.06	5.66	100.91	130.76
Utter Pradesh	13.25	11.80	14.26	49.32	117.83
West Bengal	4.56	2.76	7.55	53.21	134.36
Kolkata	2.64	3.91	0.49	145.77	#
Chennai*	2.26	3.17	0.09	136.02	134.61
Delhi	5.01	7.75	0.40	213.92	#
Mumbai	4.0	6.29	0.19	150.24	#
Total	100.81	102.52	98.71	1924.12	2876.81

#: Rural- Urban Breakup of population is not available.
**Included in Tamilnadu from year 2011*
Source: TARI & Telecom Statistic India 2019.

Table no 6 explain that there is significant Correlation 0.610 at 0.05 % between rural and urban areas. There also significant correlation 0.626 at 0.05% for Tele-density between rural and urban areas.

4. RESULTS OF STUDY

Study found that individual internet user per 100 in the world growth rate of internet user in India is 16.62% followed to Africa (17.69%) who has highest growth rate in the world. Study found that CAGR of internet user, mobile internet user, social network user and face-book user is 12.55%, 8.37%, 13.59% & 14.09% during the study period respectively. Study also found that growth rate (CAGR) of no of phone, wireless, urban, rural, public and private is 12.10, 13.25, 9.55, 17.21, 4.41 & 13.87 percent during the study period respectively. While during the same time period growth rate (CAGR) of wireline is negative (-4.85%).

Study also found that growth rate (CAGR) of Tele-density, wireless, urban, rural, public and private is 10.83, 11.97, 7.59, 16.23, 3.23 & 19.69 percent during the study period respectively. While during the same time period growth rate (CAGR) of Wireline is negative (-5.94%).

We can say that telecom sector can play a dominant role in employment generation in India especially in rural areas. Because there is a huge potential of growth of internet expansion in female user, youth and rural areas. This sector also contribute through providing awareness of good health and knowledge of job opportunity especially in rural and remote areas. Anyway there is some lacking of less contribution of mobile internetin development of Indian economy. There are various reasons behind to this are less income, lack of knowledge of Internet, lack of infrastructure, lack of electricity supply and beliefs (personal opinions) etc. Majority of female cannot access internet because they are not working, they are less educated and they do not have an internet connection at home.

5. CONCLUSION

India is a very fast growing market for the latest technology offerings. It has a huge potential for telecom sector growth especially in rural areas. Because contribution of rural population and female in rural as well as urban are very less. Demand of such people has also played vital role in the growth of Indian economy during the CRONA-19, through work from home and online classes. As we have analyzed the up-word trend in the growth of mobile internet access rate, creating social networking application in Hindi and regional languages will enable greater growth of mobile internet in India. Getting the Web-series for youth and women, online coaching classes, special application for students and teen-ager in their mother tongue is necessary; Internet could be a driver for immense business growth in Indian economy. Work from Home and online teaching and online coaching classes, online banking,

mobile payment apps, games of children, special apps for students and professionals also play a dominant role in the growth of telecom sector in Indian economy. Indian government as well as IT researchers should recognize this as potential and they should take effort to build applications and good infrastructure for telecom sector in Indian economy.

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Cryptography

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Abstract: With everything moving to Internet from switching on lights in one's bedroom to banking and ecommerce everything requires security which can be provided by cryptography. Various protocols and techniques can be used to achieve certain level of security. Cryptography is the backbone for communication in a secure way on Internet, cryptography provides confidentiality, integrity and authentication. In cryptographic literature 'A' is used for Alice, 'B' for Bob, and 'E' for Eve (eavesdropper), where Alice and Bob are 2 parties communicating in a secure way and Eve is a malevolent character who's eavesdrop and trying to understand what the communication is about and making sense out of it which can later be used for malicious purposes which could be to blackmail one of them or using the sensitive information shared in the communication to do other unpleasant acts. Cryptography makes sure only intended user gets and understands the data and no alteration is done to data from the time period of its creation and even in transmission it also helps in identification of an individual who is sending the data.

1. INTRODUCTION

In early days cryptography was used to encrypt messages so that only intentional recipient understands it and is unintelligible to other people.

The earliest known use of cryptography is in the main chamber of the tomb of the nobleman Khnumhotep II, in Egypt which was carved around 1900 BC. It used uncommon hieroglyphic symbols in place of ordinarily used ones.

Even in India 2000-year-old, Vatsyayana writer of Kamasutra speaks of two different kinds of ciphers called Mulavediya in which cipher alphabet consists of pairing letters and using reciprocal ones and Kautiliyamwhich was based on substitution of phonetic relations like vowels becoming consonants.

Since earlier days several cryptographic techniques have been used by various people in different continents but their main purpose was to hide the plain text and make it unreadable to eavesdropper so that it could only be understood by the intended receiver. Julius Caesar used substitution cipher-Caesar Cipher, with a shift of 3 to communicate with his generals. A strong cryptographic technique makes itself infeasible to break, as it may either require a lot of resources for its decryption or it might take a lot of time to decipher.

Cryptography has been used interchangeably with encryption since 19th century, but with advancement in technology and computing it has been related to information technology, mathematics, physics, computing, communications and protocols and now consists of encryption and decryption services, and communicating securely. Cryptography is derived from Greek words **'kryptos'** which means '**secret', or'hidden'** and **'graphine'** which means **'to write' or 'study'**. It is the study, practice and implementation of techniques to securely communicate by using various techniques and protocols so that at-least 2 parties can communicate securely over an unsecure network or in presence of an adversary.

Older cryptographic techniques used substitution and transposition techniques but modern cryptography uses complex mathematical functions and cryptographic algorithms based on computational hardness and assumptions which can't be solved efficiently, even using the latest computer hardware and software.

Earlier cryptography focused on preserving the confidentiality of the message being sent by making it incomprehensible. It tried to create a secret message of plain text which is beyond one's understanding until and unless they knew the technique being used to encrypt it, it was used by leaders, spies and terrorists.

Cryptography is broadly divided into two types- symmetric cryptography and asymmetric cryptography. Unlike the old days now it has become a separate field of study and different terms have been coined related to it and its study, like cryptanalysis.

2. BASIC TERMINOLOGY AND WORKING

Cryptography helps in achieving Confidentiality, Integrity, and Authentication. These goals can be achieved in the following ways:

- **Confidentiality:** confidentiality means to keep something secret or private and away from unintentional access of people having unlawful goals. To achieve this encryption is used which encrypts the data using mathematical functions and keys so that malevolent entity can't make sense out of the data being used or transmitted.
- **Integrity:** integrity means ensuring the data has maintained its characteristics and haven't been tampered. It helps in making sure that data haven't been altered whether by unintentional or intentional purpose. Hashing is the

methodology used to ensure data integrity. Some of the hashing techniques are MD5, SHA.

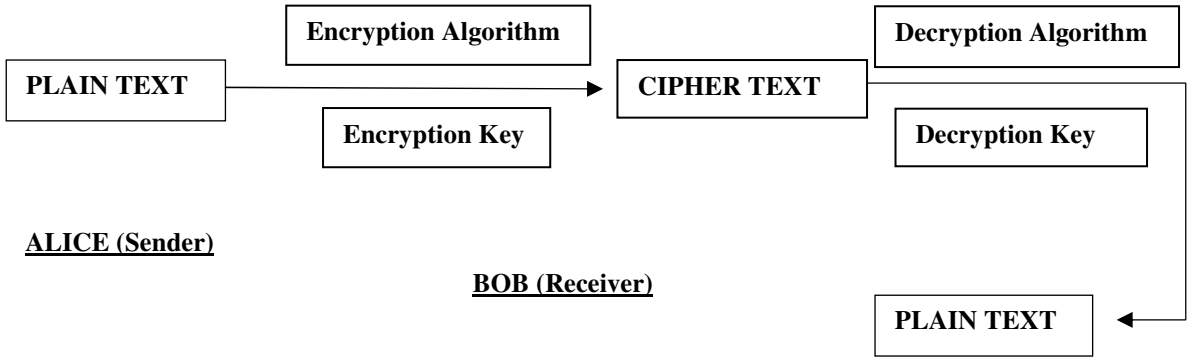
- **Authentication:** authentication is the process of validating whether the person really is who he/she is saying they are. It is achieved by digital signatures, digital certificates or Public Key Infrastructure.

Cryptosystems is a library or a suite of cryptographic algorithms which are used for encryption and decryption it also includes key generation algorithm.

Various components of cryptosystems are:

- **Plain Text:** it is the data which is to be encrypted/protected.
- **Encryption Algorithm:** it is the mathematical algorithm which is used with a key to produce cipher text.
- **Cipher Text:** it is the ambiguous text which gets created after encryption is performed on it.
- **Decryption Algorithm:** it is that mathematical algorithm which is used to convert cipher text into plain text which was taken at the beginning.
- **Encryption Key:** it is that value which is used along with encryption algorithm by sender to encrypt the plain text and produce cipher text.
- **Decryption Key:** It is that value which is used by the receiver along with decryption algorithm to decrypt the cipher and convert it into plain text.

Basic encryption is achieved by taking a piece of plain text and using an encryption algorithm on it with an encryption key to produce a cipher text and for decryption of cipher text a decryption algorithm is used with a decryption key to produce the plain text. This process is illustrated below:



Encryption key and Decryption key can be same or different based on the type of encryption being used. Encryption key and Decryption key are same for Symmetric Key Encryption whereas Encryption key and Decryption key are different for Asymmetric Key Encryption.

3. SYMMETRIC KEY ENCRYPTION

In symmetric key encryption same key is used for encryption as well as decryption process. In this both sender and receiver should have same key before starting the conversation or sharing of files so that it could be used for encryption or decryption.

Here suppose Alice sends data encrypted with an algorithm using symmetric key and when receiver say Bob receives it, he/she should know the symmetric key used by Alice to create the cipher text so that when decryption is performed, he/she can use the shared key to decrypt it and make sense out of it.

Any third party in between won't be able to make sense out of the data if they don't know the pre-shared key.

Symmetric Encryption is also known as Private Key Cryptography as the key being used stays between the sender and the receiver in the conversation.

Symmetric Key Encryption uses following two methods for encryption:

- **lock Ciphers:** in block cipher algorithm a fixed size of data or a block of plain text is encrypted at once, typically each block is 64-bits, 128-bits or 256-bits. Padding is used if plain text is shorter than the block size. Most symmetric ciphers are block ciphers.
- **Stream Ciphers:** it is an algorithm which encrypts one bit or character of plain text at a time.

Some examples of symmetric key encryption are Caesar Cipher, VigenereCipher, Twofish, Blowfish etcetera.

- **Caesar Cipher:** It is substitution symmetric cipher, in which each letter of alphabet is replaced by some other letter in alphabet. The second letter replacing the first letter is located at some place in the alphabet series, first letter is shifted certain positions and the letter located at that position replaces the first letter.

  Example:

  For **Plain Text:** hello how are you

  With shift of 3

  Cipher Text would be**:** khoorkrz duh brx

- **Vignère Cipher:** It is a polyalphabetic substitution cipher which uses vignère table for substitution of letters. Vignère Table is 26*26 with alphabets from A to Z in both its row and column. It has first of letters in normal alphabetic order and from second row they shift leftwards in cyclic way.

Each letter of plain text is replaced with a respect to a key.

Example:

Plain Text:hello how are you

Key: good

Cipher Text:nszouvcz gfs bui

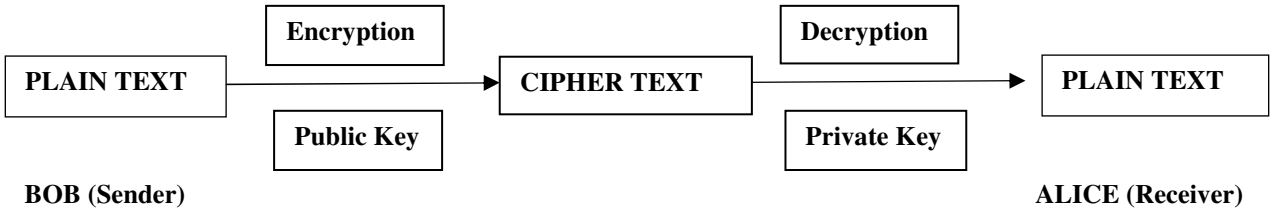
Here plain text consists of 14 letters and key is of 4 letters so key is repeated until it becomes of the same length of plain text. Thus, key would become **'good ood goo dgo'**. And for each corresponding word say h and g we will and intersection in Vignère Table and similarly for other letters until we get the cipher text.

Vignère Table

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
B	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A
C	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B
D	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C
E	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D
F	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
G	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F
H	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G
I	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H
J	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I
K	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J
L	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K
M	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L
N	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M
O	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N
P	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Q	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
R	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
S	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
T	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
U	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
V	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
W	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
X	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Y	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Z	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y

4. ASYMMETRIC KEY ENCRYPTION

In asymmetric key encryption two different keysare used for encryption and decryption process. One key is used for encryption the data and other key is used to for decryption. In this one key is public and the other key is private.



Suppose Bob and Alice are communicating using asymmetric key encryption then Bob while sending the data encrypts it using Public Key of Alice and Alice on receiving the encrypted data decrypts it using his/her Private Key, and when Alice wants to send some data then he/she encrypts it using Bob's Public Key and Bob on receiving the encrypted data decrypts it using his/her Private Key.

Here Public is commonly available and is distributed to all those people who want to communicate with certain entity and the entity's Private Key is only known to them so that they can decrypt the data they have received thus maintaining confidentiality of the data.

Asymmetric Key Encryption is also known as Public Key Cryptography as one key is publicly available while other is not.

Some examples of asymmetric key encryption are: RSA, Elliptic Key Cryptography etcetera.

- **RSA:** It stands for Rivest–Shamir–Adleman this comes from the surnames of the people who developed it Ron Rivest, Adi Shamir, and Leonard Adleman. It uses mathematical properties of prime numbers to generate and secure public and private keys, it is difficult to factor the product of 2 large prime numbers thus is secure and is widely used on Internet.
- **Elliptic Curve Cryptography:** This cryptographic system is based on algebraic structure of elliptic curves over finite fields. Elliptic curve can be defined using mathematical equation: $y^2=x^3+ax+b$.

Encryption techniques like any symmetric or asymmetric key cryptography help in maintaining data confidentiality.

5. HASH FUNCTONS

Hash Function or hashing is a technique to convert a certain piece of data into a value of certain fixed length. The converted fixed size value is called the hash value. A good hash function makes it difficult to reverse the hash value into the original text. Hash functions can be used to store the passwords i.e., passwords can be converted into a hash value using the hash functions and instead of storing them in plain text their hashed valued can be stored and then later matched with the actual password to give access to the user.

Same piece of data should always produce same hash value and no two separate plain text should produce same hash value. When two different data produce same hashed value, it is called collision and it is not considered good for security purposes. Some examples of hash functions are SHA – Secure Hash Algorithm, MD5- Message Digest 5 etcetera.

Example:

Plain Text: Hello how are you

Hash Value: cfb47e87027d7559a21946edb68b5f7a

Hash Functions helps in maintaining data integrity.

6. DIGITAL CERTIFICATE AND DIGITAL SIGNATURES

Digital Certificatesare like an identity card and identifies an entity. It helps users to identify the entity who has the digital certificate and the organization which issued the certificate. It is issued by a Certification Authority and it guarantees the validity of information in the certificate.

Suppose Alice and Bob wants to communicate securely and Bob wants to be sure of the identity of Alice then Alice will issue a Digital Certificate for themselves, he/she requests Registration Authority. Registration Authority will verify the identity of Alice by various means and transfer the request to Certification Authority, then it creates a digital certificate for Alice with Alice's Public Key and other information like:

- **Serial Number:** it uniquely identifies the certificate used for checking validity of certificate by Certification Authority.
- **Issuer:** It identifies the certification authority which issued the certificate.
- **Validity:** It tells, till which date certificate is valid.
- **Subject:** It identifies the owner of the certificate.

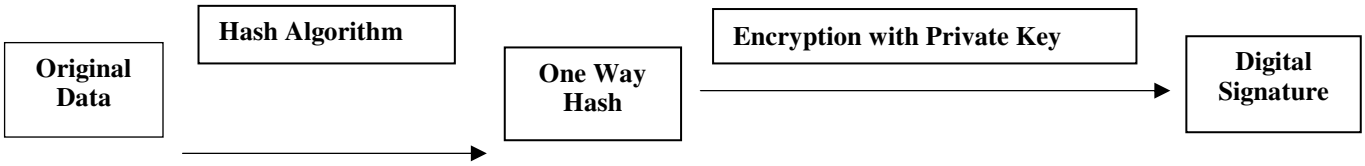
Certificate's digital signature is also created which is signed by Certification Authority's private key to ensure validity, non-repudiation and integrity of the certificate which can be

checked for (by Bob) by using the certification authority's public key which is usually installed in the browser if the certification authority is well known.

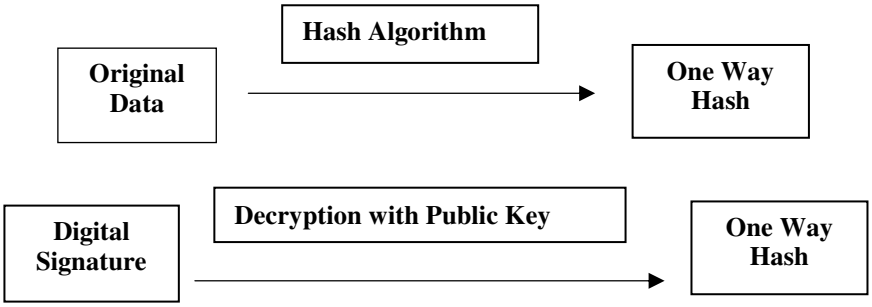
Then when Bob wants to send any message, they will use Alice's public key and upon receiving the encrypted message Alice can decrypt it using their private key.

Digital Signatures are used to identify the individual who sent the message and in nonrepudiation i.e., the person who sent the message signed with digital signature later on can't deny that they didn't send it.

Its working procedure is as follows: a message is passed through a hashing algorithm and private key is used to sign it with a signing algorithm resulting in digital signature and this digital signature is sent with the original message to the intended recipient and upon receiving it they pass the data through the same hashing algorithm and use the corresponding public key to decrypt the digital signature, if the two has hare same it means that the data was not altered and it has maintained its integrity and secondly it proves that the sender is who they said they are and later can't deny that they didn't send the message.



BOB (Sender)



ALICE (Receiver)

Here if at the receiver side if both of the hashes are same one which is computed from original data and other from decryption with public key then data integrity is validated and also ensuring confidentiality and authenticating the sender.

7. CRYPTANALYSIS

It is a technique to decrypt an encrypted message without the knowledge of the key being used. It is a process of finding vulnerabilities or weaknesses in a cryptographic algorithm and find the underlying message which was initially encrypted using specific algorithm and key. Various techniques are used by researchers or people with malicious intent like:

- **Cipher Only Attack:** in this only cipher text is available or known to the attacker or researcher.
- **Known Plaintext Attack:** in this attacker has information about both cipher text and its corresponding plain text. In this attacker can find out the keys being used or find the algorithm being used using various tools.
- **Chosen Plaintext Attack:**in this attacker/researcher uses arbitrary plaintext and passes it through the encryption being used and from the corresponding ciphertext they try to determine the key being used.
- **Chosen Ciphertext Attack:** in this attacker/researcher uses decrypted text of certain ciphers and then try to determine the key being used.

Cryptanalysis helps in developing stronger cryptographic algorithms or even improving the current algorithm in which vulnerability was found. If it is done by an attacker, they can take advantage of the weaknesses and thus rendering the system using certain cryptographic technique more prone to attacks.

8. CONCLUSION

Cryptography plays a crucial role in not only communication but generally in secure and reliable working of interconnected computers onInternet. Cryptographic techniques help in

achieving confidentiality, integrity, authentication and non-repudiation and helps in maintaining resilient and robust connectivity and security. Various protocols are used alongside various encryption techniques or digital certificates or digital signatures depending on the use case and thus helps in maintaining certain level of security which should be maintained always or there could be serious consequences. Information Technology is ever growing field and everything is being shifted to Internet and for their secure functioning cryptographic techniques are must, cryptography is progressing with the shift of various things on Internet and will continue to grow.

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Facial Attributes Classification using Convolutional Neural Network (CNN)

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Abstract: ***Facial Attributes plays important role in recognition process and therefore facial attribute classification has been gaining significant attention from the Computer Vision community. In recent times, remarkable progress has been seen along with the availability of challenging Facial Attributes Classification (FAC) datasets, like MCFA. However, not many practical applicationshave been developed based on Facial Attribute Classification because of the shortage of the test images as they all are required to be face aligned images. This makes it difficult to apply on images having agroup of people or on live camera feed. We propose a method where first faces are detected in an image, and trained model is applied on this images for feature classification of each face in an image. The same method can be followed for video frames and live camera feed.***

Keywords: ***Facial Attribute Classification, Fetaure extraction, CNN***

1. INTRODUCTION

In recent times, the usefulness of Facial Attribute Classification methods increased a lot and explored in several different application areas, including object recognition [9], face verification [3, 5], image search and retrieval [2, 6].In this paper, we address the problem of identification of attributes from images of person or a group of persons. The attributes may include facial attributes (e.g. hair colour, presence of sunglasses or eyeglasses, presence of beard or moustache etc.) demographic attributes (e.g. age, race, gender) and other visual and non-visual attributes which could be identified by other models and sensors. Severalapplications uses these attributes i.e. criminal investigation etc. To locatea suspect, investigation agencies typically gather thephysical traits of the suspect from eyewitnesses. Based onthe description obtained, entire video archives from surveillance cameras are scanned manually for persons with similar characteristics. This process is time consuming and energy consuming. An effective attribute classification algorithm would drastically accelerate the process by automatically detecting faces from video frames and applying the feature detection model on them.

The visual attribute-based searching for images of people has been previously investigated in [2, 10]. A video-based surveillance system that supportsimage retrieval based on attributes has been proposed by Vaquero et al. [10]. Siddiquieet al.[2] introduced an Image Ranking and Retrieval method based on Multi-Attribute Querieswhich retrieves images based not only on the words that are part of the query, but also considersthe remaining attributes within the vocabulary that couldpotentially provide information about the query. Kumar et al. have built an image search engine [15] where users can retrieve images of faces based onqueries involving multiple visual attributes.

We propose a new method for Facial Attribute Classification in which first all faces are detected in an image using suitable face detection algorithm. Then these faces are cropped out of the original image and attribute classification models are applied to each one of them to predict the attributes of each face. During this process the correlation of the attributes is also taken care of. For example: The face which was detected as belonging to "Male" category is not checked further for "Wearing Lipstick" category. These attributes are displayed with an index to identify which person in that photo the attributes belong to. This methodology is shown in Fig 1.

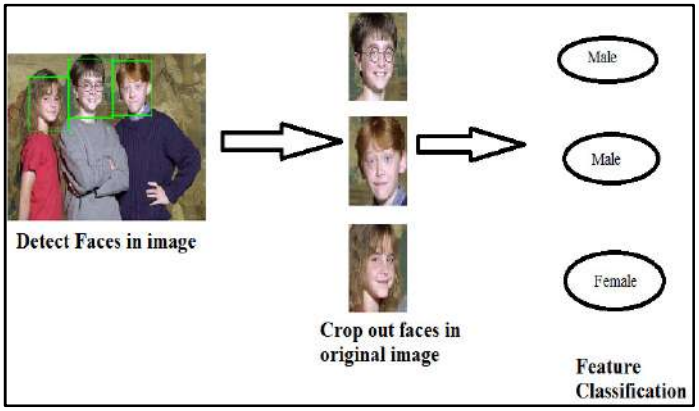

Fig. 1. The Proposed FAC Methodology

The major contributions of this paper are summarized as follows:

- The training sets of each attribute is created by selecting 10,000 images from the original datasets, where about 40% of images have positive value for the attribute.
- The proposed method can be used to identify features from multiple faces in the image by first cropping them out and then applying trained model for each attribute.
- To some level, correlation between attributes is taken care of.

2. RELATED WORK

Kumar et al. [5, 6] employed face attributes for face verification using binary classifiers trained to recognize the presence or absence of describable visual appearance (face attributes). Due to the recent advances in GPUs and deep learning, Liu et al. [4] cascaded two CNNs, LNet for face localization and ANet for attributes prediction, which are fine-tuned jointly with attributes labels. They have achieved state-of-the-art performance for 40 face attributes prediction tested on CelebA and LFWA, respectively. Using [4], Zhong et al. [7] compared different features from different CNN layers and gained a better performance on face attributes prediction using the mid-level CNN feature. More recently, Rudd et al. [8] proposed a novel mixed domain adaptive optimization network (MOON) for facial attribute recognition.Siddiquie et al. [2] introduced an Image Ranking and Retrieval method based on Multi-Attribute Queries.

3. THE PROPOSED TRAINING METHOD

This section describes the method proposed for the training and testing of models that would classify images on facial attributes.

Datasets used for Training

The datasets utilized for training of models are CelebA and LFWA Datasets.

The CELEB dataset contains 202,599 facial images of 10,177 identities, and 40 binary attribute annotations for each facial image [11]. On the other hand, the LFWA dataset has more than 1,680 identities and contains more than 13,000 facial images [12]. The images in this dataset have 73 binary facial attribute annotations, with many annotations such as Indian, Asian, Black, Senior, Middle Aged and many more which are not present in CelebA Dataset.

Creating Training Sets from Original Datasets

A unique method was employed in the creation of training sets from original dataset to introduce a good diversity in our training data so that the model generalizes well during the testing (or deployment) phase.

For the CelebA dataset, out of the first 100,000 images, about 4000 images are chosen in which that attribute is present. Then, the images in which that attribute is not present are included in the previously chosen set to create a temporary set of 10,000 images. This temporary set is reshuffled to create final training set of 10,000 images for that attribute.

A similar method is used for the LFWA set. The only difference is that the training set of each attribute from LFWA dataset has 5000 images, since that total number of images in LFWA Dataset is very small compared to the number of images in CelebA dataset.

CNN Architecture

The architecture of the network which was used for training models to detect presence of facial attributes is described here. All images are resized to 128×128 before feeding it to the network.

The layers in the CNN network are:

- **conv2d_1** (Convolutional Layer): Convolution is the first layer to extract features from an input image. Input image is resized to 128×128 before passing to this layer.
- **max_pooling2d_1** (Pooling Layer): Pooling layers section would reduce the number of parameters when the images are too large. Here the input image is resized to 64×64.
- **conv2d_2** (Convolutional Layer): The second convolutional layer to extract more intrinsic features from image with input size of 64×64.
- **max_pooling2d_2 (**Pooling Layer): The second pooling layer where image is resized to 32×32.
- **conv2d_3** (Convolutional Layer): The third convolutional layer with an input size of 32×32.
- **max_pooling2d_3 (**Pooling Layer): The third pooling layer where image is resized to 16×16.
- **dropout_1** (Dropout): To prevent overfitting, 30% of learned units are dropped out.
- **flatten_1** (Flatten): Combine all the found local features of the previous convolutionallayers.
- **dense_1** (Dense): A Fully Connected layer with activation shape of (500,1).
- **dense_2** (Dense): A Fully Connected layer with activation shape of (2,1) and activation function Softmax. For each sample x_b,softmax loss is represented by:

$$L_i^{cls} = y_i^{cls} log(p_i) + (1-y_i^{cls}) \, log(1-p_i) \qquad (1)$$

Wherep_i represents the probability given by the network, which indicates the sample xi being a face. And $y_i^{cls} \in \{0, 1\}$ isthe ground-truth label.

CNN architecture used for attribute classification has been illustrated in Fig. 2.This architecture was used to create trained models for classification of each of the attribute of CelebA Dataset and some unique attributes from LFWA Dataset.

Testing of trained models

The models created using the architecture were tested on their respective datasets. The models which showed good accuracy were used for further experiments. Models of some unique attributes such as demographic attributes (e.g. age, race) were also selected for this purpose.

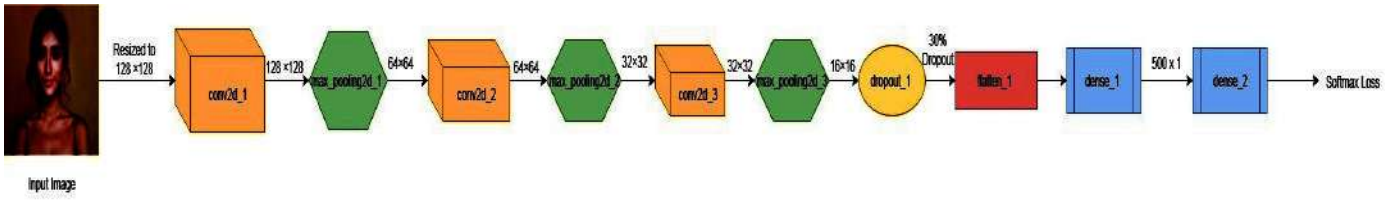

Fig. 2. The CNN architecture used for classification of each attribute from CelebA and LFWA Dataset.

4. EXPERIMENTAL SETUP

The models selected in the previous section (shown in Table I) were used for analysis and experiments mentioned in this section.

These attributes are grouped into seven categories: Gender, Age Group, Race, Expression, Hair, Wearing and Others.

a. Face Detection

As all models are trained on facial images, for detection of attributes from random images or videos first faces need to be detected from these images. Then these detected faces need to be cropped out and then feature detection models can be applied to them. Two face detection methods were considered.

i) Haar Feature-based Cascade Classifiers:

Object Detection using Haar feature-based cascade classifiers is an effective object detection method proposed by Paul Viola and Michael Jones [13] in their paper, "Rapid Object Detection using a Boosted Cascade of Simple Features" in 2001. It is a machine learning based approach where a cascade function is trained from a lot of positive and negative images. It is then used to detect objects in other images.

TABLE 1: Selected Attributes

S. No.	Attribute Name	Accuracy	Dataset
1	5_o_Clock_Shadow	98%	CelebA
2	Bald	97%	CelebA
3	Bangs	98%	CelebA
4	Black_Hair	95%	CelebA
5	Blond_Hair	97%	CelebA
6	Brown_Hair	98%	CelebA
7	Eyeglasses	95%	CelebA
8	Gray_Hair	98%	CelebA
9	Heavy_Makeup	98%	CelebA
10	Male	93%	CelebA
11	Mouth_Slightly_Open	95%	CelebA
12	Mustache	97%	CelebA
13	No_Beard	96%	CelebA
14	Pale_Skin	96%	CelebA
15	Rosy_Cheeks	96%	CelebA
16	Sideburns	92%	CelebA
17	Smiling	95%	CelebA
18	Wearing_Hat	99%	CelebA
19	Wearing_Lipstick	93%	CelebA
20	Wearing_Necktie	95%	CelebA
21	Asian	71.75%	LFWA
22	White	82.71%	LFWA
23	Black	84.8%	LFWA
24	Indian	78.4%	LFWA
25	Frowning	86.56%	LFWA
26	Baby	97.2%	LFWA
27	Child	74.3%	LFWA
28	Youth	70%	LFWA
29	Middle Aged	70%	LFWA
30	Senior	70%	LFWA

The authors introduced the concept of Cascade of Classifiers. Instead of applying all 6000 features on a window, the features are grouped into different stages of classifiers and applied one-by-one.The window which passes all stages is a face region. OpenCV already contains many pre-trained classifiers for face, eyes, smiles, etc. Those XML files are stored in the opencv/data/haarcascades/ folder.

ii. CNN based face detector: While Haar Cascade Classifier is good only for detecting frontal faces, the CNN based detector is capable of detecting faces almost in all angles. Therefore, it is better for detecting faces with pose variations. The disadvantage is that it is meant to be executed on a GPU. To get the same speed as the HOG based detector it needs to

run on a powerful Nvidia GPU.A pre-trained CNN based face detector is available in DLIB Library.

b. Testing models on images, videos and webcam feed

The selected models are used for testing on images, videos and webcam feed

- Following steps were followed to test model on images.
- First, all faces are detected in an image using suitable Face detection algorithm, as mentioned in the above sub-section.
- Then these faces are cropped out of the original image and attribute classification models are applied to each one of them to predict the attributes of each face. In this step. Correlation between attributes is also taken care of. For example: A person identified as Male is not checked for Wearing_Lipstick attribute.
- These attributes are displayed with an index to identify which person in that photo the attributes belong to.

The results of this procedure have been shown in Fig. 3(a). For videos, a similar procedure is used. A video can be considered to be a collection of frames. Therefore for each frame, the steps mentioned above are followed. The results are combined to form an output video. Two snapshots of the output video are shown in Fig. 3(b).

Fig. 3. Testing of attribute classification models on- (a) Images (b) Video Frames

TABLE 2: Classification accuracy (%) comparison between models used for experiments and the state-of-the-art methods on the CelebA dataset.

	5_o_Clock_Shadow	Bald	Bangs	Black_Hair	Blond_Hair	Brown_Hair	Eyeglasses	Gray_Hair	Heavy_Makeup	Male	Mouth_Slightly_Open	Mustache	No_Beard	Pale_Skin	Rosy_Cheeks	Sideburns	Smiling	Wearing_Hat	Wearing_Lipstick	Wearing_Necktie	**Average**
FaceTracer [6]	85	89	88	70	80	60	98	90	85	91	87	91	90	83	84	94	89	89	89	86	**86**
PANDA-l [14]	88	96	92	85	93	77	98	94	90	93	93	93	93	91	87	93	92	96	93	91	**91**
LNets+ANet [4]	91	98	95	88	95	70	99	97	90	98	92	95	95	91	90	96	92	99	93	93	**93**
MT-RBM (PCA) [15]	90	98	88	76	91	85	96	97	85	90	88	97	90	96	94	96	88	97	89	94	**91**
MCFA[1]	94	99	96	89	96	92	99	98	92	98	93	95	96	97	95	98	93	99	94	97	**96**
Proposed Model	98	97	98	95	97	98	95	98	98	93	95	97	96	96	96	92	95	99	93	95	**97**

5. CONCLUSION

In this paper, we have discussed a method for simultaneous detection of facial attributes of multiple faces in an image or video. This could have wide-ranging applications as elaborated in the above sections.We also compared the model used for this method with state-of-the-art models for attribute classification and found that our model showsbetter accuracy for many attributes. Thus, our future work will be towards further increasing the accuracy of our model so that itprovides more robust predictions.

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Invoicing Systemusing Reactand Node JS – A Web Application

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Abstract: This invoicing system is a complete solution for businesses conducting transactions. The platform enables the businesses to keep track of invoices, existing customers and actually analyze how much business they have performed on a per-invoice basis. The wastage of paper that occurs due to business transactions that can be avoided completely due to this invoicing system platform. GST Taxation System has complicated the process of handling business transactions, especially for small businesses who have to file multiple GST returns every single year. Every business wants to track all the transactions that has occurred with its customers on which date, which items purchased and other information. Wastage of money, for every single invoice printed, it actually costs the business money which quickly adds up if they are a lot of transactions being processed everyday with the business firm.

Keywords: React, Node, JS, HTML, CSS, Mongoose, Axios, MongoDB, Webpack, Express, Web App, Invoicing System.

1. INTRODUCTION

Invoicing System is a must in today's market. Currently, the current taxation system known as GST has complications which is a hassle to manage, especially for small businesses [1]. Adding to the problem, managing invoices in their physical copy, making sure they are not lost, sorting them, organizing them is another challenge. Therefore, an electronic Invoicing System where a business firm can create, view and analyze all invoices at a glance or specific ones in detail is very important. It also leads to less management issues, easier retrieval and overall analysis of data. A web-based computerized application for the management of invoices records, implementing a system which overcomes the limitations of the existing approaches by letting the businesses submit or rather create invoice records through electronic systems is one step forward to sustainable development in the long-run. Providing a platform on the internet will make this system accessible to everyone at all times. Doing the same work on a website saves time and resources. Using a computerized system means:

1. Accessible any time anywhere to everyone.
2. Promotes information transparency.
3. It can be upgraded according to the needs of businesses.
4. Can result in easier analysis of invoice records.
5. No redundancy at all.
6. Minimal user interaction results in error free data storage (Human errors are minimized).

2. OBJECTIVE

Our app Objective is to solve the problems faced by Business owners and growing retailers. Also, to solve problem related to learning. This includes:

- Reduce the hectic process of book keeping and managing bills. Provide better learning material
- Provide an invoice software which easy to use even with no technical knowledge. Provide good answers of previous papers
- Information Transparency.
- Provide a user-friendly software with record keeping and robust design.

3. INTRODUCTION TO OUR APP

Invoicing System is more than a software, it is the necessity of current market. We have a complex taxation system which could lead to hindrance in basic business work, Errors in day-to-day calculations. Invoices should be the least concern of a growing business. Updating GST values and hidden calculation making things complex than ever before. Our Software is Easy to Use, with a basic and very simple UI avoiding all the clutter and app crashes. It comes within built data base management to keep the data of even the oldest customer to experience a never before management. Upgradeable to various business needs it comes with a robust design. Packed with all latest technology it is light weight and because it's a web app its available anywhere from any device.

4. TECHNOLOGIES USED

HTML 5 - HTML5 one of the known core mark-up language of the web used for structuring and presenting content for the globe Wide Web. On year 2014 the complete fifth revision of the HTML became standard of the planet Wide Web Consortium (W3C). Its core objectives are to better the

language with support for the newest multimedia while keeping it easily readable by developers and accurately understood by machines and software (web browsers, parsers, etc.). HTML5 may be a reason to the point that the HTML and XHTML in common use on the World Wide Web are a mix of features introduced by various specifications, alongside those introduced by software products like web browsers, those established by common practice.

CSS: Defined as cascading style sheets is a markup language [7]. It used to make beautiful interfaces. It used to beautify web pages and interfaces made in HTML and XHTML, this markup language could be applied to any XML document including plain XML, SVG and XUL. With HTML and JS, CSS is a technology used by most of the websites to create immersive and beautiful webpages. You can make different file and keep all styling in that.

NodeJS: NodeJS is a platform used for backend development [4]. It is very popular amongst Web Developers as it allows them to write JavaScript on the backend. NodeJS uses single threaded and non-blocking I/O model which leads to very efficient and lightweight applications that could run amongst distributed devices. It is open source and cross platform as well. It is built on V8 JavaScript Engine, which is used by Google Chrome.

MongoDB: MongoDB is a NoSQL type cross-platform database which uses the concept of documents and collections [11]. This leads to very high performance, very high availability and easy to scale up whenever needed to. Collection works as a group of multiple documents – similar to a table used in RDBMS type. Documents inside a specific collection can have a variety of different fields. Generally speaking, all documents in a specific collection are of similar structure or purpose.

ExpressJS: ExpressJS is one of the most popular web frameworks used on the backend side coupled with NodeJS. It allows us to build REST APIs with very simple syntax without worrying about low level processes, etc. It provides us with a lot of flexibility as we can add multiple packages using NPM which we can plug into Express to speed up the development process even further. It is developed by by TJ Holowaychuk.

Axios is very popularly used for HTTP client purposes which allows us to make HTTP requests for saving or fetching data very easily [9]. It uses promises – one of the popular modern JavaScript features which allows us to handle asynchronous HTTP requests quite elegantly. It allows us to abstract away any differences that exist cross-browser. Axios is used a lot with React, Vue, etc. and other frameworks.

Mongoose is very popular amongst MongoDB users. It is an ODM (Object Data Modelling) library used with NodeJS and MongoDB [8]. It allows us to establish relationships amongst data, handle validation for schema and translate objects in code and their specific representations of them in MongoDB Database. It simplifies interaction with MongoDB such as creating, updating, reading and deleting operations to perform on a specific model.

5. DRAWBACKS OF EXISTING SYSTEMS

There are various issues with the existing system, some of these are as follows:

- There is very few software available in the market.
- Existing software have low quality and hard to use.
- No options for small retailers with multiple branches.
- Very few web-based apps available in the market.
- Current software requires sound technical knowledge.

6. BENEFITS OF PROPOSED APP

The proposed app includes characteristics to solve the most of the problems. The various benefits of the proposed app are as follows:

- It offers simple and elegant UI
- Notification facility for the participants
- Better learning material
- Good Solution of the previous year papers as given by the teachers
- Students can register and ask their query by just one click
- Easy and Interactive GUI
- Online results for the events

7. INSIGHTS OF APP

Invoicing System is a web application which is used to help business to create and manage invoices. Currently the app is combined of 4 tabs each serving their defined purpose. Starting with home page which consist all previous invoices. Then Settings tab to edit user data and option to add frequent customer followed by create invoice button.

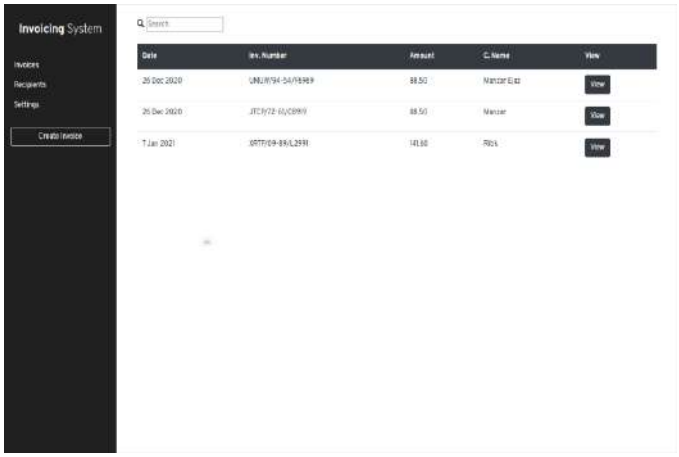

Fig. 1. Main Interface

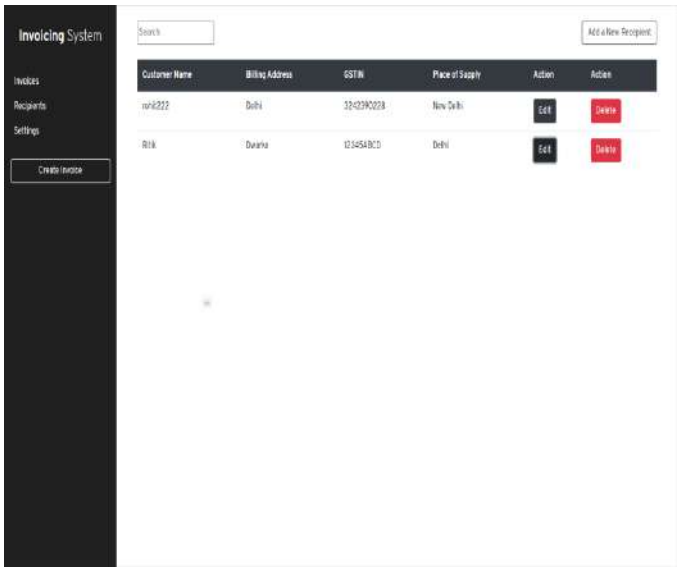

Fig. 2. Recipients page

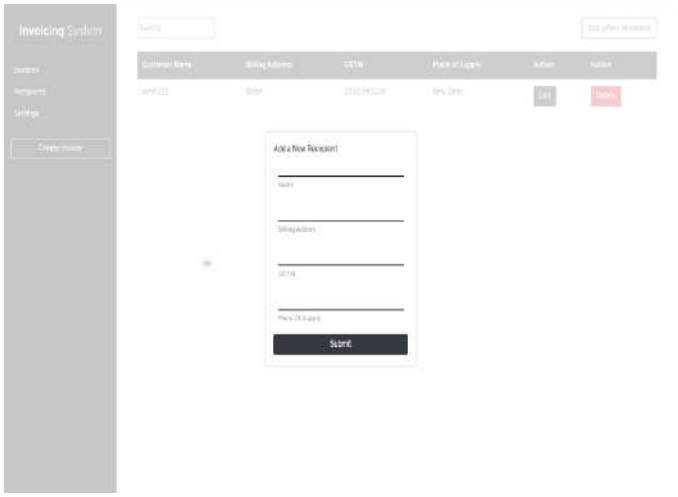

Fig. 3. Onclick to "Add a new Recipient"

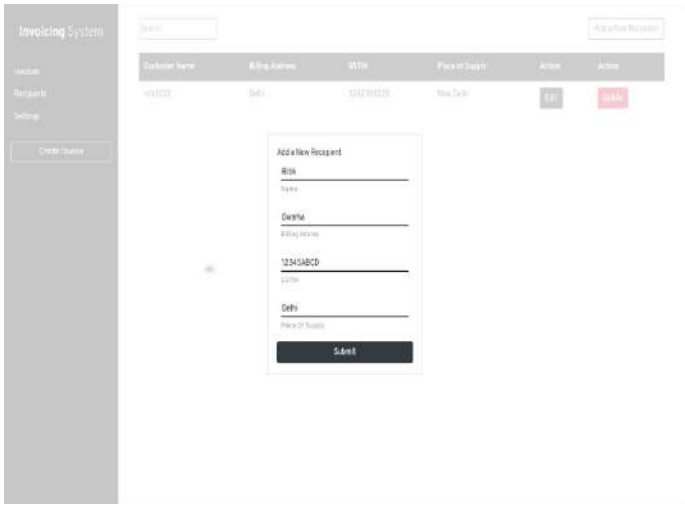

Fig. 4. Data filled in new recipient

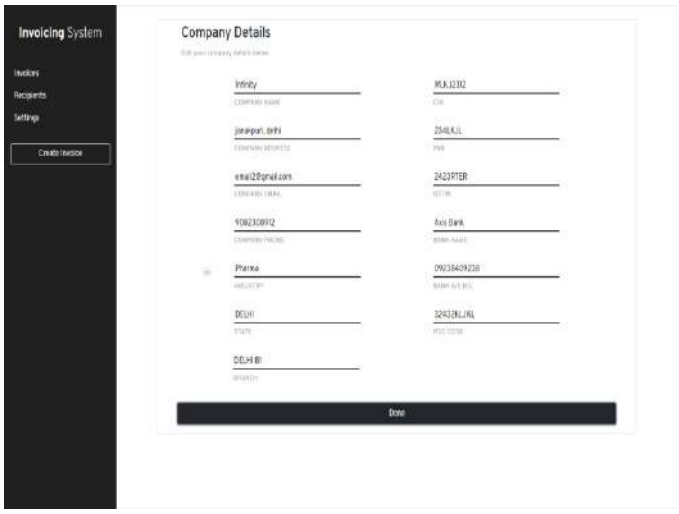

Fig. 5. Settings page

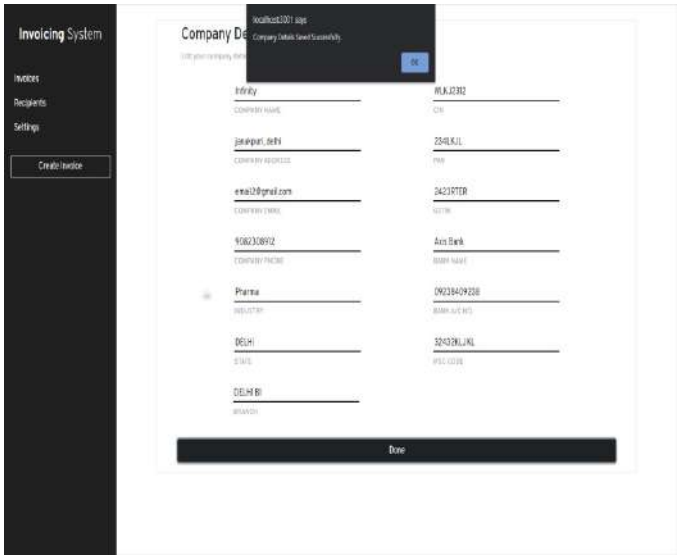

Fig. 6. Settings change prompt

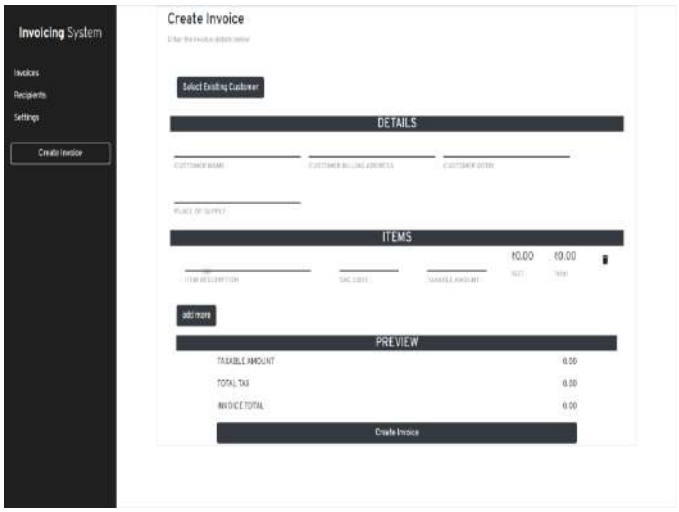

Fig. 7. On click "create invoice"

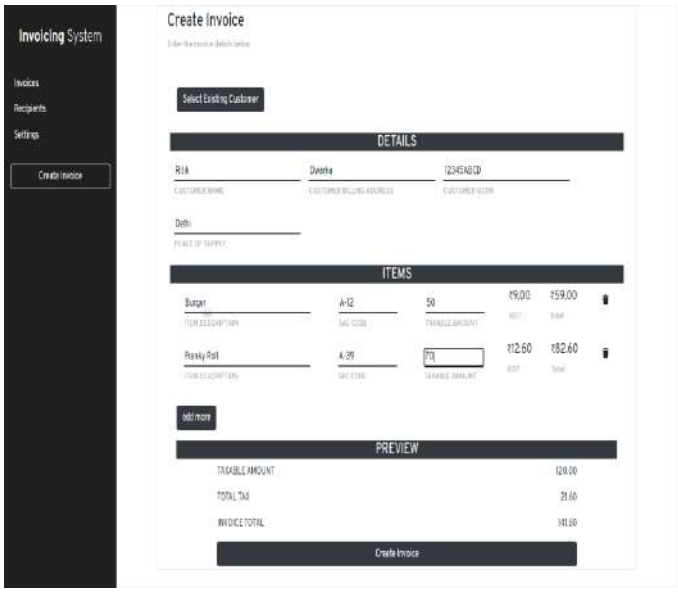

Fig. 8. New invoice filled with details

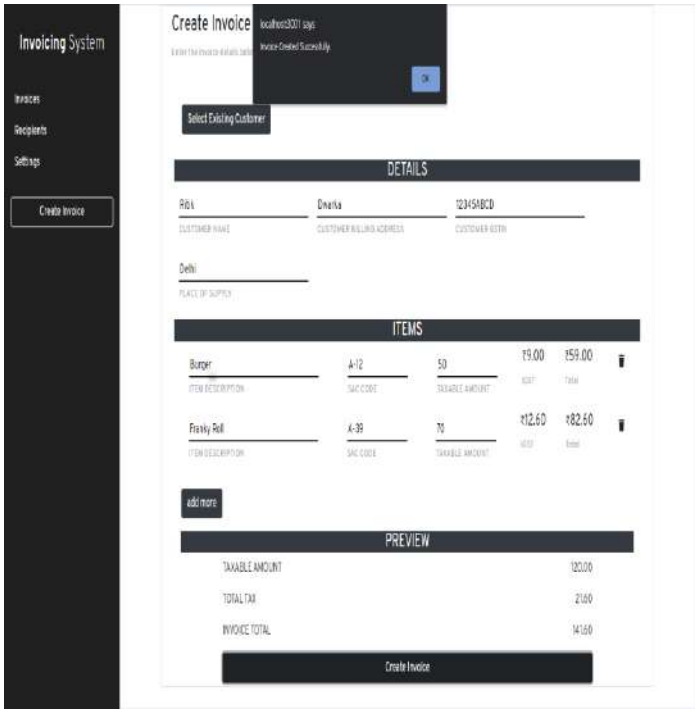

Fig. 9. Invoice created prompt

8. FEATURES EXPLAINED

Mainpage

The main page contains all the previously generated invoices with "Edit" button to edit them. On top right it consists a search bar to search among invoices for desired invoice. On left there is a tap to navigate to other features.

As shown in Fiigure1.

Recipients

On click to left tab on recipients page it navigates to recipients page. Here detailed of saved customer is shown with features to edit and delete their data. As shown in fig2 on top right corner it has a button to add new customer which launches a popup to add new customer where you can fill data and save it with submit button.

Settings

On click to settings tab on left it navigates to settings tab where all the Company details are available and could be changed. After editing a prompt comes up for confirmation.

Create Invoice

On click to "create invoice" button a form shows up where you can fill the desired data and then there is second column to add new items with their prices. In third column there is live preview.

9. CONCLUSION AND FUTURE SCOPE

To conclude, Invoicing System works like a component which can handle all the invoices and provide an easy-to-use User Interface to perform invoice-related tasks digitally. Easy-to-use User Interface Bug-free User Experience Feature-rich Software.

The project has a very vast scope in future. The project can be implemented on intranet in future. Project can be updated in near future as and when requirement for the same arises, as it is very flexible in terms of expansion. The following are the future scope for the project. Authentication System Updating Invoices Deleting Specific Invoice.

A login system for big firms to have in various branches. And Addition to aesthetics we would plan to add various color themes.

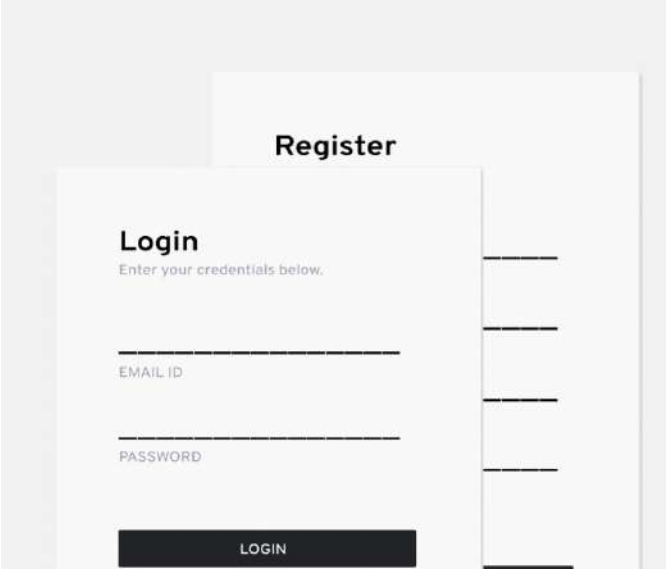

Fig. 10. Login and Register feature

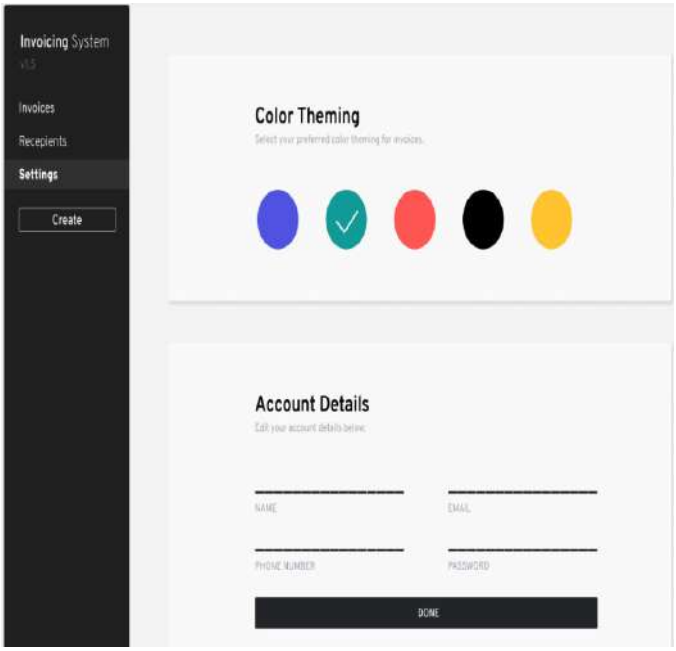

Fig. 11. Color themes

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Startup India: Is it a Non-starter?

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Abstract: India is one of the most promising land for the young minds and is one of the fastest developing economy of the world. To ensure a speedy development many initiatives have been undertaken by the government of India time and again and one such most promising and demanding initiative of the decade was the 'Startup-India Campaign' started in the year 2016 which invited a lot of praise and was full of scope for the budding entrepreneurs. This paper attempts to discuss the benefits derived from the scheme by entrepreneurs, and a thorough analysis of the scheme initiated by the prime minister Shri Narendra Modi. The analysis is mainly focused on the three major promises offered by the campaign namely -the extension of financial help from banks on relaxed terms and conditions, the various tax benefits offered to the budding entrepreneurs, and the ease in doing business by relaxing the incorporation procedure. The paper also discusses the reasons for the failure of most startups in India.

Keywords: Startup India Campaign, Tax exemption, Entrepreneurs

1. INTRODUCTION

Startups require velocity, not speed. - Gaurav Shrivastava, Pensieve

The prime minister Shri Narendra Modi announced the Startup India campaign in the year 2016 to promote the spirit of entrepreneurship in India [10]. The major aim of the campaign was to support the entrepreneurs by extending financial support through banks on easy and quick terms as well as providing various benefits in form of tax exemptions and simplification of the regulations and procedure involved in the incorporation of a startup.

2. OBJECTIVES

1) To understand the importance of the entrepreneurial spirit for a country like India.
2) To analyse the three major pillars/support provided through the Startup India Campaign i.e., the terms and conditions on which financial support is landed by the banks to startups/entrepreneurs, the various tax benefits available for the startups/entrepreneurs, and the steps involved in the incorporation of the startups.
3) To critically analyse the reasons of failure of most startups despite the government efforts and support.
4) To suggest measures to overcome failures and reduce the probability of failures.

3. REVIEW OF LITERATURE

The startup market is increasing in popularity and the number of startups is bound to grow multifold in the future. It is much easier for the entrepreneurs to own a startup due to access to venture capitalists, funding agencies, mentors, accelerators and the government initiatives. However, in order to survive in the market, these startups have to be innovative and provide differentiation.[4] (Chillakuri, B. (2018)).

Start-ups have an appropriate and innovative capacity to create new markets for new goods and services that are introduced by the business community [11] (OECD, 2016).

The Indian startup ecosystem is inclined toward digital technologies, concerned with people, planet and profit, with resource availability and information as the key to success. [13] (Singh, S., Chauhan, A., & Dhir, S. (2019))

4. WHAT IS A STARTUP?

The eligibility condition for a business entity to be called a startup as per the startup India Campaign as defined through the Govt. notification issued in suppression of the Gazette Notification No. G.S.R. 364(E) dated April 11, 2018 as modified vide Gazette Notification No. G.S.R. 34 (E) dated January 16, 2019. the 19th February, 2019, is as follows:

1. An entity shall be considered as a Startup up to a period of ten years from the date of incorporation/ registration, if it is incorporated as a private limited company (as defined in the Companies Act, 2013) or registered as a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2008) in India.
2. Turnover of the entity for any of the financial years since incorporation/ registration has not exceeded one hundred crore rupees.
3. Entity is working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation.
4. Provided that an entity formed by splitting up or reconstruction of an existing business shall not be considered a 'Startup'.

Benefits of startups: "You are the boss"

It is quite evident that in India rate of unemployment is quite high. It is also quite evident that there is no shortage of skill and talent in India, it is the lack of opportunity that is the hindrance in employing the skills. One of the best way to employ the skills and tackle the problem of unemployment is to promote entrepreneurs in the country as increase in the number of entrepreneurs would not only ensure skill utilization but would also lead to more and more employment generation[3]. The various advantages of having more entrepreneurs are:

1) It results in employment generation.
2) It leads to innovation.
3) It contributes in the economic growth in the country.
4) It helps in attracting foreign investors.
5) The pace of industrialization and technological development would increase.
6) It would lead to wealth creation.
7) It would result in social change.

The advantages are endless for a country like India at this stage where the percentage of young and talented but unemployed or under employed population is high. But equally never ending is the list of problems faced by entrepreneurs.Hence, the government offered support to the entrepreneurs through various means some prominent ones of these have been analyzed below.

The first important inclusion in the "Startup India campaign" is to provide solution to the problems faced by the prospective entrepreneurs and the one such problem is lack of finances. The insufficient finance or the high cost involved in its procurement discourages an individual to take up the entrepreneurial activity. Due to lack of experience, security or existing cash flows, entrepreneurs fail to attract investors. Besides, the high-risk nature of startups, as a significant percentage fail to take-off, puts off many investors.In order to provide funding support, Government has set up a fund with an initial corpus of INR 2, 500 crore and a total corpus of INR 10, 000 crore over a period 4 years (i.e. INR 2, 500 crore per year). The Fund is in the nature of Fund of Funds, which means that it will not invest directly into Startups, but shall participate in the capital of SEBI registered Venture Funds.The government is also giving guarantee to the lenders to encourage banks and other financial institutions for providing venture capital [2]. Some of the schemes offered by the government in this regard are:

- Mudra Loan Scheme.
- MSME Business Loans in 59 Minutes.
- The Credit Guarantee Scheme (CGS)
- Stand Up India Scheme.
- Coir Udyami Yojana.
- National Bank for Agriculture and Rural Development (NABARD)
- Credit Link Capital Subsidy Scheme.
- National Small Industries Corporation Subsidy.

The second biggest initiative undertaken under the campaign by the government of India is offering various Tax Benefits/exemptions for Entrepreneurs in India. Tax benefits promote and support entrepreneur that helps in saving money and ensure sufficient money for working capital and plough back into the business. The various such benefits are

80 IAC Tax exemption: Startup may apply for Tax exemption under section 80 IAC of the Income Tax Act. The Startup can avail tax holiday for 3 consecutive financial years out of its first ten years since incorporation. To avail this benefit the entity should be a recognized Private limited or a Limited Liability Partnership and have been incorporated after 1st April, 2016. Though the profits of eligible start-ups are eligible for tax holiday, these profits will be subject to minimum alternate tax (MAT) applicable @ 18.5% plus surcharge and cess (effectively 20.4%).

Exemption u/s 56 of the Income Tax Act (Angel Tax): A Startup may apply for Angel Tax Exemption. To avail the benefit the entity should be a Department for Promotion of Industry and Internal Trade (DPIIT) recognized Startup and aggregate amount of paid up share capital and share premium of the Startup after the proposed issue of share, if any, does not exceed INR 25 Crore.

A 20% exemption in Capital Gains Tax: As part of its Startup India Vision 2024, DPIIT reportedly to promote budding entrepreneurs wants to exempt proceeds on the sale of residential properties from capital gains tax. Besides, DPIIT has also suggested reducing founders shareholding requirements from 50% to 20% and a mandatory holding period to 3 three years from the earlier five years.

Presumptive tax: Start-ups anticipating less business turnover may opt for presumptive tax provisions u/s 44AD, where in tax @ 8 per cent gross receipts have to be paid if the total gross receipts do not exceed Rupees Two Crore Per Annum. A startup selecting the presumptive taxation scheme has to set up business either as sole proprietorship or HUF or registered partnership firms. Under this scheme, start-ups are relieved from maintaining books of account also.

The third initiative taken under the Startup India Campaign is the simplification of the incorporation procedure. The following steps are involved:

Step 1: Incorporate your business

One must incorporate a Private Limited Company or a Partnership firm or a Limited Liability Partnership. The normal procedures for registration of any business like obtaining the

certificate of Incorporation/Partnership registration, PAN, and other required compliances have to be followed.

Step 2: Register with Startup India

After this, the business must be registered as a startup. The entire process is simple and online. Log on to the Startup India website and fill up the form with details of the business. Next, enter the OTP which is sent to the e-mail and other details like, startup as type of user, name and stage of the startup, etc. After entering these details, the Startup India profile is created. Startups can now apply for various acceleration, incubator/mentorship programmes and other challenges on the website along with getting access to resources like Learning and Development Program, Government Schemes, State Polices for Startups and other related services.

Step 3: Get DPIIT Recognition

The next step after creating the profile on the Startup India Website is to avail Department for Promotion of Industry and Internal Trade (DPIIT) Recognition which helps the startups to avail benefits like access to high quality intellectual Property services and resources, relaxation in public procurement norms, self-certification under labour and environment laws, easy winding of company, access to Fund of Funds, tax exemption for 3 consecutive years and tax exemption on investment above fair market value.

Step 4: Documents to be uploaded for Registration

- Incorporation/Registration Certificate of your startup
- Details of the Directors
- Proof of concept like pitch deck/website link/video (in case of a validation/ early traction/scaling stage startup)
- Patent and trademark details (Optional)
- PAN Number

Step 5: Certificate of Recognition

The certificate of recognition is be issued after the examination of all the documents which is usually done in 2 days after submitting the details online.

Requirements which are Waived Off

Startup India has changed the procedure of registration since its inception. It has exempted most of the previous requirements now. Many documents which were required to be filed previously are waived off. The list of documents which are not required to be filed at the time of the registration are-

- Letter of Recommendations
- Letter of funding
- Sanction Letters
- Udyog Aadhar
- MSME Certificate
- GST Certificate

Facts about the failures of Startups in India

The startup has two important features that are innovation and growth [2]. The real startups are prone to failure by definition. The more innovative the startup, the more likely it is to fail. Some of the hard accepted statistics about the startups in India is that "90% of India's startups fail within the first five years. The major reason reported is that the lack of pioneering innovation." findings of a survey by the Institute for Business Value and Oxford Economics. The lack of originality/innovation is clear from the fact that despite being the third largest startup ecosystem after US and China, the number of international patents India has applied for in 2015-16 was only 1, 423 whereas Japan's count stood at 44, 235, China at 29, 846 and South Korea at 14, 626. It clearly means that lack of innovation which is the essence of startup is the major reason for failure.A survey was conducted by 'failory' to find out the business failure rates by industry and major reasons for failure of startups. The findings of the survey are as follows:

TABLE 1: Business Failures rates by Industry:

Nature of Industry	% of failure
Finance Industry and real estate	42%
Education and Health	44%
Agriculture	44%
Services	45%
Wholesale	46%
Mining	49%
Manufacturing	51%
Construction	53%
Retail	53%
Transportation and utilities	55%
Information	63%

Source: [14] survey by Kyril Kotashev, failory.com

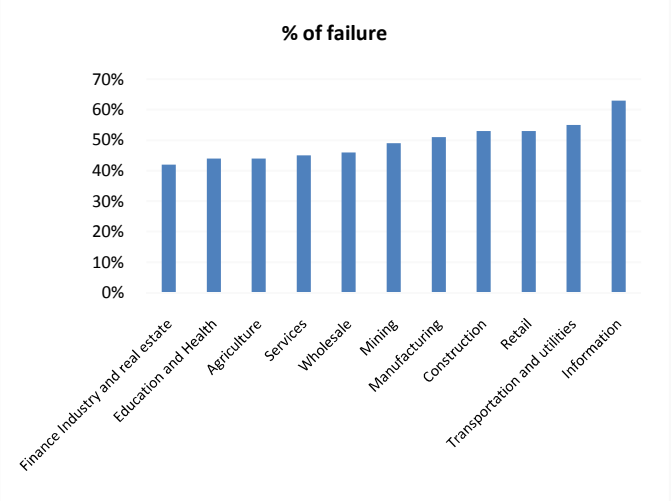

Figure 1: As it can be seen that information industry faced more %age of failure in comparison to other industries, followed by transportation and utilities, construction and retail and manufacturing. The major reasons for startup failures can be summarized as follows (survey report)

TABLE 2

Reasons for failure	%age of failure
Marketing problems and product market failure	56%
Team Problems	18%
Finance Problem	16%
Tech Problem	6%
Operations and legal problem	4%

Source survey by Kyril Kotashev, failory.com[14]

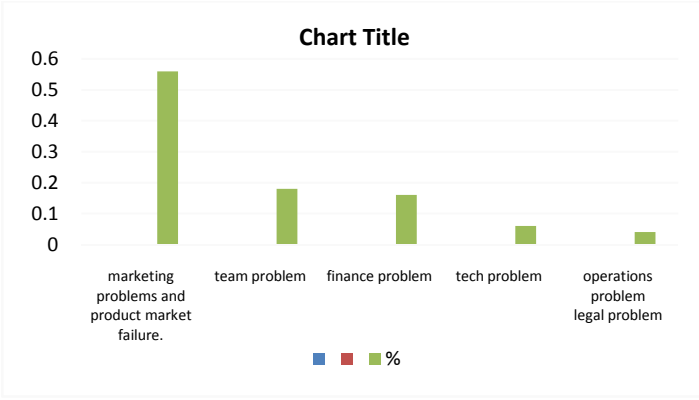

Figure:2

Evidently, the chart shows that the marketing problems are the major reasons of failure of most of the startups, followed by team problems (lack of technical knowledge and expertise) followed by financial problems.

5. CONCLUSIONS

One of the biggest challenges before India is unemployment or underemployment which is said to be the underlying reason for various other problems. To improve the situation of unemployment in the country and to contribute to the economic growth, the government has been trying to encourage the spirit of entrepreneurship as it will generate more employment opportunities, including in the manufacturing sector which can be a big employer, and thus contribute to the economic growth of the country. The states like Gujarat and Andaman and Nicobar island have been declared to be the Best Entrepreneurial states in the Year 2019. The government of these states have been supporting the pace of such activities to the greatest possible extent[12]. Other states of India are learning from these states and are providing every possible support for promoting the growth of such activities. Though the government of India is promoting a conducive environment for startups, yet the growth and the success rate of startups is still not very high. The major reasons for their failure is the lack of innovation and understanding of the market and the consumers targeted by the entrepreneurs. It is suggested that a number and variety of entrepreneurial development programmes should be started and a platform should be provided to the budding and prospective entrepreneurs to help them to take up the entrepreneurial activity and to make them familiar of various common problems or reasons of failures. These EDPs must provide a platform where the successful entrepreneurs and leading business houses should discuss their experiences both good and bad and should encourage and motivate the budding and innovative entrepreneurs. The country need many more successful entrepreneurs to get out of the low and middle income trap.

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A Study on Digital Transformation and Human Resources

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Abstract: Digital adoption and transformation is a key development for most organizations in their strategic goals. Today, Digital Transformation is presenting human resource with an opportunity to prove that they are key strategic differentiators for the organization. After all, it is the people who decide how technology is to be used and it is the HR team that creates a conducive culture for their workforce to do so. With knowledge becoming accessible to everybody and technology also driving cost optimization, the only distinct competitive advantage that organizations have, is their people. Digital HR transformation is the process of incorporating digital technology to improve how the HR department (and in consequence, the organization as a whole) functions. This digital technology includes cloud-based HRIS, digital recruitment solutions, internal communication platforms, workforce engagement software, people analytics tools, and much more.The research question is: what do HR (human resource) professionals perceive to be the changing role of Human Resource Management in times of digital transformation. The purpose of this study is to explore the changing role of human resource management in an era of digital transformation.

Keywords: Digital, Transformation, human resource, technology, workforce.

1. INTRODUCTION

"Technology is nothing. What's important is that you have a faith in people, that they're basically good and smart, and if you give them tools, they'll do wonderful things with them."

- Steve Jobs

Done right, digital transformation can positively touch every part of business-from improving the customer experience to the ability to attract and retain top talent, to enabling employees to perform to streamlining operations.HR is undergoing rapid and profound change. Once viewed as a support function that delivered employee services, HR is now being asked to help lead the digital transformation sweeping organizations worldwide. We see this change taking place in three areas:

- **Digital workforce:** How can organizations drive new management practices (which we call "digital DNA" 1), a culture of innovation and sharing, and a set of talent practices that facilitate a new network-based organization?
- **Digital workplace:** How can organizations design a working environment that enables productivity; uses modern communication tools (such as Slack, Workplace by Facebook, Microsoft Teams, and many others); and promotes engagement, wellness, and a sense of purpose?
- **Digital HR:** How can organizations change the HR function itself to operate in a digital way, use digital tools and apps to deliver solutions, and continuously experiment and innovate?

Digital HR builds upon years of effort. In the 1960s and 1970s, HR focused on personnel operations, automating transactions, and maintaining a sound employee system of record. In the 1980s, HR was redesigned as a "service organization"; centers of expertise began to manage core talent practices, service centers handled individual needs, and HR business partners began to be embedded in the business. In the 1990s and early 2000s, HR was redesigned again around integrated talent management, often accompanied by the implementation of new systems for recruiting, learning, performance management, and compensation.

This shift is happening rapidly, as ***HR leaders are being pushed to take on a larger role in helping to drive the organization to "be digital, " not just "do digital"***(figure 1).The process starts with digital transformation in HR, as HR leaders explore new technologies, platforms, and ways of working.When integrating these digital technologies, HR professionals need to consider how new apps, tools, and programs will transform the workforce and how work is performed and completed.

Today, HR's focus has shifted toward building the organization of the future. Companies are hiring young, digitally savvy workers who are comfortable doing things themselves and sharing information in a transparent way. They want an integrated, digital experience at work - designed around teams, productivity, and empowerment- and HR is expected to deliver it.Digital transformation is the transformation of business processes, operations and structures in order to exploit the benefits of new technology.

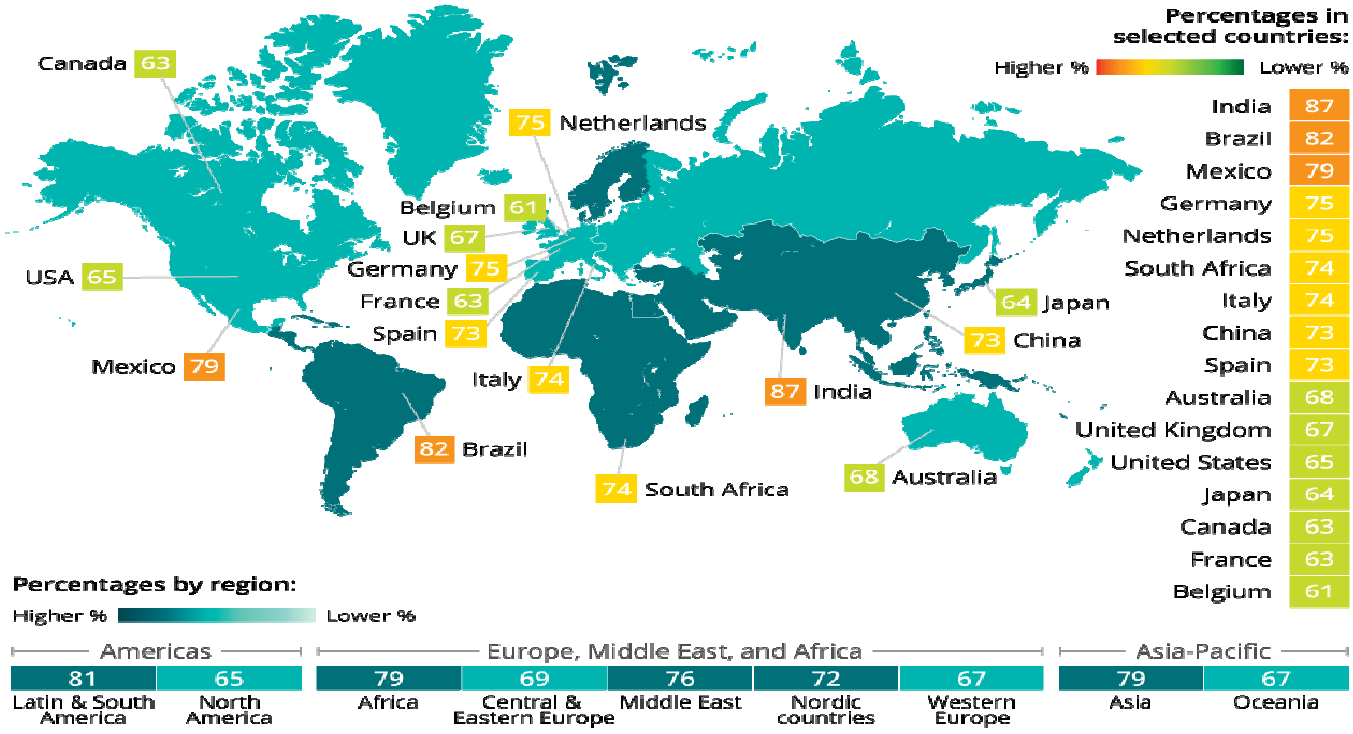

Fig. 1. Digital HR: Percentage of respondents in different countries rating this trend "important"or "very important"

Source: Deloitte University Press (dupress.deloitte.com)

Digital transformation is defined as the transition of a business based on traditionally manual processes to a business that has technology as its core in all its functions: internal (employee-facing, operational) and external (customer-facing). Transformation is the outcome of digitization. It is not the process of digitization itself.It is a revolutionary change but also an evolutionary phenomenon. In addition to digitization, the transition to business with technology at its center also entails a shift in the culture and mindset of an organization.

Much like every other part of the organization, the digital transformation of HR is essential in an age where technological disruption is the norm. According to a Deloitte survey, digital transformation budgets are going to increase by 25 percent in the next year. With the advent of artificial intelligence (AI), blockchain, machine learning, automated performance management, and much more, HR teams that still rely on Excel sheets to collect and interpret data need to make the shift to automation, and quickly.

2. OBJECTIVES OF THE STUDY

1. To understand the conceptual framework of HR Digital Transformation.
2. To study the need of HR Digital Transformation.
3. To help identify the difference between Digitization, digitalization, and digital transformation.
4. Tounderstand the role and the pillars of HR in digital transformation.
5. To study the different stages and the components of HR Transformation.
6. To find out theHR challenges of digital transformation.
7. To suggest and offer new options.

3. NEED OF DIGITAL TRANSFORMATION IN HR

As a rule of thumb, any HR transformation, whether it is a digital one or not, has to take place with a clear objective in mind and has to make business sense. Too often still, companies seem to give in to peer pressure; their competitors all 'do digital' so they feel like they have to do something too. But digitalizing certain HR processes just for the sake of it is never a good idea. It leads to the implementation of (expensive) technology that doesn't meet the actual needs of the business. Needless to say, this totally defies the purpose of a transformation.The goal of digital transformation in HR may be multifold (figure 2):

1. To automate processes and reduce the time spent on repetitive tasks.

2. To maximize the employee experience.
3. To use the freed-up time to strategize and ultimately benefit the business bottom line.

HR digital transformation is the transformation in the way HR functions, using data to guide all areas of HR: payroll, benefits, performance management, learning and development, rewards and recognition, and hiring.

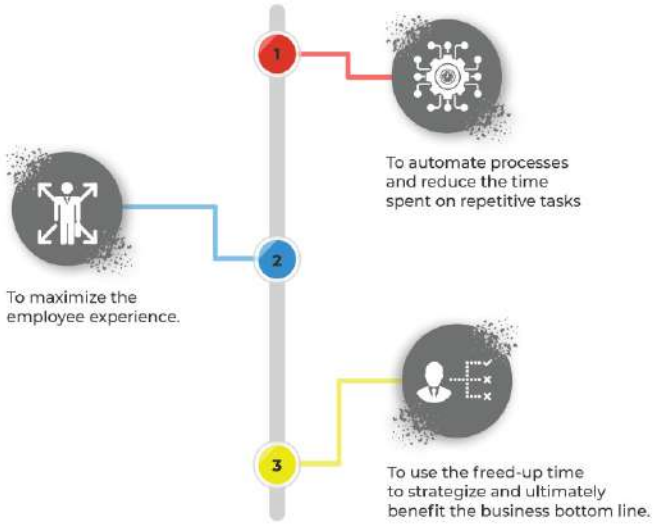

Fig. 2. Why undertake Digital Transformation in HR

Source: HR Technologist 2019

4. DIGITIZATION, DIGITALIZATION AND DIGITAL TRANSFORMATION: EACH STEP LEADS TO THE NEXT

These three terms, often used interchangeably, have subtle differences in meaning. It is important to identify these differences to know where you stand in the digital transformation journey.

1. **Digitization:** Digitization is a shift from manual processes to digital processes. *For example,* digitizing the performance records of employees from 10 years ago.
2. **Digitalization:** Digitalization involves becoming a digital-led organization, an organization that leverages digital tools for its daily operations. Digitalization involves creating a culture of using technology to run a business.*For instance,* An ideal example of digitalization is an organization led by artificial intelligence that uses the technology to leverage the insights it offers into key processes. The impact of AI on the HR industry is real and tangible. AI is most efficient in the hands of people who:

- Are willing to acknowledge that AI can help, not hurt, their job.
- Possess the critical thinking skills required to interpret the data it presents.
- Possess the creative thinking skills required to use the data to develop an HR strategy that will deliver business outcomes.

TABLE 1: Digital HR: Old Rules vs. New Rules

Old rules	New rules
HR departments focus on process design and harmonization to create standard HR practices	HR departments focus on optimizing employee productivity, engagement, teamwork, and career growth
HR selects a cloud vendor and implements out-of-the-box practices to create scale	HR builds innovative, company-specific programs, develops apps, and leverages the platform for scale
HR technology teams focus on ERP implementation and integrated analytics, with a focus on "ease of use"	HR technology team moves beyond ERP to develop digital capabilities and mobile apps with a focus on "productivity at work"
HR centers of excellence focus on process design and process excellence	HR centers of excellence leverage AI, chat, apps, and other advanced technologies to scale and empower employees
HR programs are designed for scale and consistency around the world	HR programs target employee segments, personae, and specific groups, providing them with journey maps relevant to their jobs and careers
HR focuses on "self-service" as a way to scale services and support	HR focuses on "enablement" to help people get work done in more effective and productive ways
HR builds an employee "self-service portal" as a technology platform that makes it easy to find transactional needs and programs	HR builds an integrated "employee experience platform" using digital apps, case management, AI, and bots to support ongoing employee needs

Source: Deloitte University Press (dupress.deloitte.com)

3. Digital transformation: Digital transformation is the outcome of both digitization and digitalization and results in an agile organization, ready to adapt to the rapid evolution of technology.It involves automating processes and creating a culture of automation. But it goes a step further and questions which processes are needed at all, eliminating tasks that held value when processes were manual but now have no place in a digital organization (table 1).It requires the mindsets across the organization to be changed, and this change begins from the leadership and trickles down to the rest of the company.

5. HR ROLE IN DIGITAL TRANSFORMATION

Recent research by HR futurist, Jason Averbrook (2018) looked at how to build a future-ready workplace and where technology fits within this evolution. He noted that "There are hundreds of enterprise solutions available on the market, but they won't change anything unless the workforce changes with it, " he said. "HR needs to also look at the mindsets, processes, and the people involved."HR leaders can play four key roles in Digital Transformation, based on their organizational needs and aspirations:

1. HR as an Innovator:

The new age workforce will be multigenerational, dispersed and collaborative (comprising an increasing number of millennials). Innovative HR teams are best placed to recommend how to leverage the workforce and their capabilities for the Digital Age. To do so, Innovative HR teams should focus on three main functions:

- Hiring people with digital capabilities like Design Thinking, Agility, Data Orientation, Network Leadership etc.
- Creating a culture conducive for the workforce to innovate, where people have the room not only to fail quick and fail often, but also learn from each of these set backs
- Training and Rewarding employees for moving away from age-old practices and displaying novelty in their approach.

2. HR as a Driver of Business:

In the Digital Age, where transformation is being driven by the business, HR plays a key role as a strategic business partner to propel the organization forward. In essence, the HR function needs to transform from being a personnel function, such as handling payroll, a predictable training and development role, rolling out the vision document given by the CEO, etc. to being instrumental in organizational development.

3. HR as a Change Agent:

Even if initiatives are driven by a dedicated 'Digital Team', no success can be achieved if HR doesn't throw its weight behind it. In fact, in today's corporate world the best HR leaders don't just react to change - they act as a change agent and lead the company's employees in a positive direction. The best HR leaders believe that the important factors needed to bring about effective change are articulating a compelling vision, communicating the strategic rationale, building credibility and trust, project management, monitoring, measuring change outcomes, and a structured follow-up to ensure the sustainability of the change initiatives being implemented.

4. HR as a Collaborator:

Technology and Digital have changed the way in which organizations and their workforce function. A change as big as digital transformation cannot be executed by a single function. It is well established by now that Digital Transformation starts with the CEO and cannot happen in silos. While the entire senior leadership team is getting involved in this transformation process, several organizations are appointing Chief Digital Officers to lead this change process. However, with the involvement of multiple teams, there are possibilities of conflicts. Here HR needs to be the force that binds the organization through a common thread of purpose.

Another result of the digital transformation is the rapid transformation of the organization culture. The behaviors of the digital workforce and the larger consumer web, along with their interaction with technology is changing at a rapid pace. As a result, the enterprise is getting left behind, struggling to adapt to the current changes in behavior and technology. Here *HR plays a crucial role in bridging the gaps by building diverse talent pools, creating a compelling career architecture for the workforce, and simplifying the talent processes.*It goes without saying that HR teams shoulder huge responsibilities in the Digital Age. Therefore, it is pertinent that HR at least personifies one of the four roles necessary for their organizations to thrive in the Digital Age.

The Four Pillars of Digital Transformation

An organization needs to understand first and foremost, based on their business and transformation objectives, what outcomes they are looking to achieve, whether the workforce has the right mindset and skill sets to deliver these objectives and whether they can support the processes for delivering the business and transformation objectives. It's only then they should decide on which platforms and technologies they need in order to make that happen.

Averbrook proposed one way to look at digital transformation is to view it as four pillars, with technology figuring as the least critical. It is the mindset of both people and the organization that is the most important avenue to change.He outlines the four pillars, and their weights, as:

a. Mindset: the willingness and enthusiasm for digital endeavors across the organization – 45%

b. People: the specific skills and attributes among the workforce – 25%

c. Processes: The strategies for communicating and effecting change – 25%

d. Technology: The actual software tools – 10%

In other words, any digital transformation will only be as good as the mindset, people and processes that drive it.

6. STAGES OF DIGITAL HR TRANSFORMATION

Brian Solis has probably done the best research in terms of outlining the various stages a company or business unit will go through on their transformation journey. His model is great to measure where company is at, and how far it still must go. T Once there is buy-in, the next step is to determine how to progress. For this, it is useful to use a transformation framework and determine actions on specific components of digital transformation. The stages are described below (as shown in figure 3)

1. **Business as usual** -This is the very first step, you are just doing the same work, the same way it has always been done.
2. **Present and active**-A few teams start to experiment with new ideas. Some digital champions emerge, and leadership begin to take note. Slowly digital creativity and education begin to be embraced.
3. **Formalized** – The transformation begins. Some of the experimentation has led to some successful pilots and or additional data that has identified gaps. Change agents are given license by leadership to explore further and the first clear initiatives and ideas are signed off.
4. **Strategic** – Senior managers give change agents a seat at the table. There is a more dynamic approach and investment is made in new people, processes and technology.
5. **Converged** – Digital is now a key priority across the business. A formal transformation team is set up and digital transformation is being driven across all entities. The big piece items have been implemented and there is a shift away from the transforming process, to a focus on micro-moments. In an HR lens, this would be where employee experience comes to the forefront.
6. **Innovative and adaptive** – Digital is now part of the DNA of the company. Continuous improvement is the new business as usual. The organization is flat and agile, with teams keeping up to date with new tech and innovations. Identifying gaps as they arise and piloting new solutions.

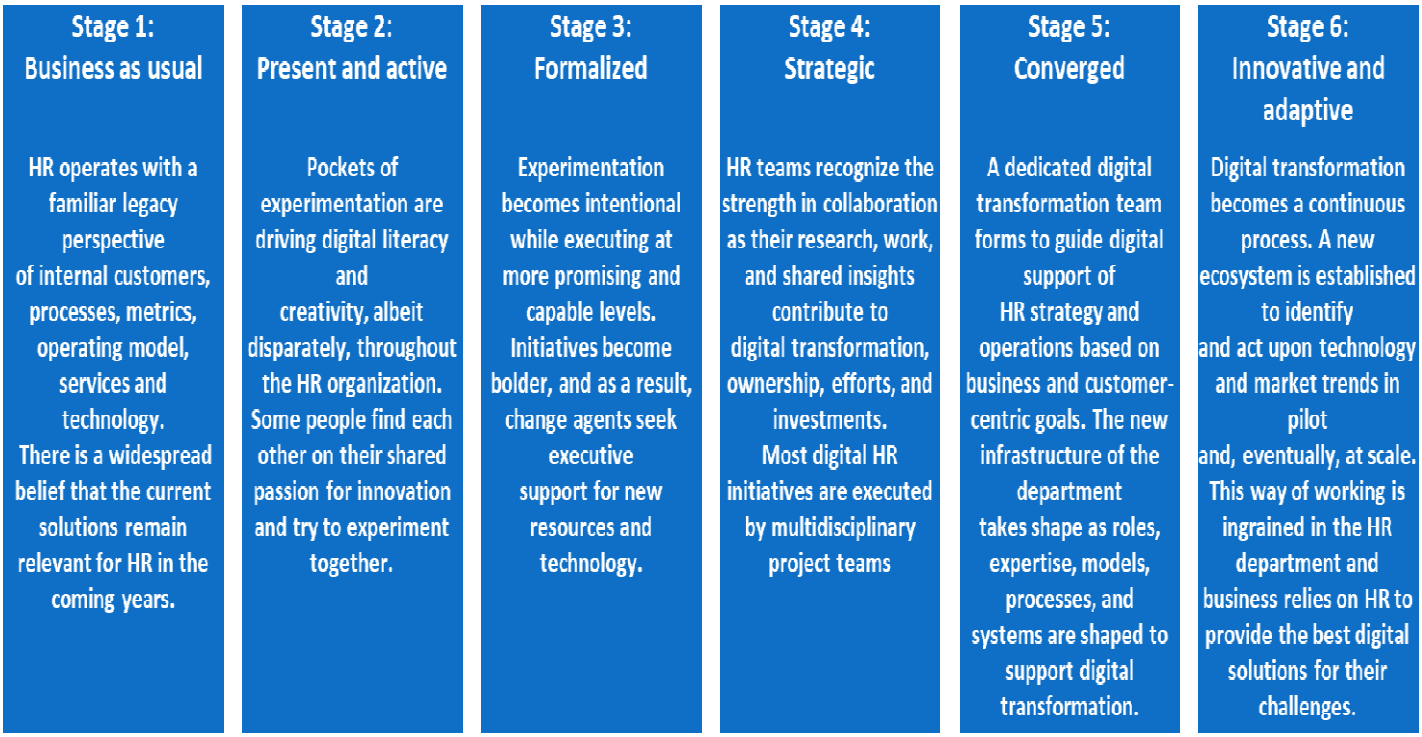

Fig. 3. Digital HR Transformation Stages

Components of digital HR transformation

Major components which are crucial to a successful transformation are discussed in table 2. All components are heavily intertwined and dependent on each other. For example, investing in new HR technology will usually lead to improved HR processes. It is a useful framework to use when there is a need to create a transformation plan with specific actions.

TABLE 2: Components crucial for a successful digital HR transformation

Component	Description
Strategy and leadership	An overarching digital (HR) strategy should help to guide the organization into the digital area. It is an important driver for HR to have this strategy in place as it helps to streamline all digital HR activities under one umbrella with an integral vision. In line with general leadership, HR leadership needs to communicate and underline the importance of digital regularly. For executive leadership, digital needs to become part of the strategic narrative and HR leadership should lead by example and stimulate experimentation.
HR Technology	The degree to which HR technology supports business priorities is directly linked to the level of digital HR transformation. However, HR technology, like (almost) everything in business, isn't an end in itself. It is a means to reach business priorities either more efficiently, more effectively, or both.
Innovation	A big part of a digital HR transformation is a culture of (digital) innovation. This encompasses an agile HR function, a thought-out plan for acquiring and developing digital solutions, and a culture that fosters innovation.
HR Processes	A major part of digital HR is the automation of standard HR processes. This means that HR processes are supported by digital solutions, they are lean, integrated, and aimed at reducing work complexity and improving employee experience.
People	Even in this time of automation through machine learning, the most important part of the HR department are still its people. They can make or break all efforts to transform HR towards digital maturity. In order to make a digital transformation in HR, it is needed to have people in your team(s) with specific capabilities who collaborate effectively and are guided by strong leadership.
Data & Analytics	A crucial element of a successful digital HR strategy is the way data is used to fuel reporting and advanced analytics. Being able to leverage HR data to deliver critical insights to the organization is key to make informed decisions about the organization and its people. Furthermore, in order to automate complex HR processes through robotic process automation, for example, it is needed to have reliable real-time data available. For HR in particular, this means having methods in place for continuous listening in the organization and being able to have access to many connected data sources.

With this information organization's digital HR transformation plan for 2021 can be prepared as shown in table 3.

TABLE 3: Digital HR transformation plan

Component	Stage 1: Business as usual	Stage 2: Present and active	Stage 3: Formalized	Stage 4: Strategic	Stage 5: Converged	Stage 6: Innovative and adaptive
Strategy and leadership						
HR Technology						
Innovation						
HR Processes						
People						
Data & Analytics						

Digital HR: Some examples

HR departments today are under pressure to rewrite the rules by redesigning talent practices, from recruiting to leadership to performance management; by experimenting with digital apps; and by building a compelling employee experience. ***Digital HR is built on innovation and experimentation***. As companies become networks and the employee base becomes both older and younger, new approaches are needed in almost every HR domain. Digital HR requires digital technology expertise. While cloud-based HR systems brought tremendous value to organizations, they are no longer enough. Today, HR teams are rethinking their solutions in the context of workflow-embedded apps; Royal Bank of Canada, Deutsche Telekom, Ford, and others now have digital design teams within the HR department.

The vendor market is reinventing itself: A new breed of HR products and solutions is coming to market, many built around

mobile apps, AI, and consumer-like experiences. Companies such as SAP and Reliance Jio now monitor real-time metrics on engagement, recruiting, turnover, and other measures to help business leaders make decisions more quickly. IBM has begun to use AI tools to give leaders regular pulses on how their teams are doing, helping them see patterns that can get in the way of performance or retention and prompting them to proactively address them through coaching, recognition, or community building.*News tools and expanded transparency facilitate digital HR. The role of AI, cognitive processing, embedded analytics, and mobile technology is changing the way people programs work.*

- Wade and Wendy, a chatbot service, brings AI and chatbots to recruitment and career planning. Wade helps employees with their career strategies and shows them career opportunities in the company. Wendy talks with candidates and helps them understand the company's culture, job opportunities, and hiring process.
- Firstjob's chatbot Mya can eliminate up to 75 percent of the questions people have during the recruiting process.
- Switch, a new app for recruiting, helps candidates find jobs by giving them a Tinder-like experience for job search and recruitment.
- Software vendor Unitive uses AI to write job descriptions based on actual discussions about the job, and can algorithmically identify gender, race, or generational bias to reduce unconscious bias in recruiting. Another example is SuccessFactors, which now provides similar tools in its enterprise talent management application.
- In compensation, Glassdoor's Know Your Worth and LinkedIn's Salary were launched this year, joining vendors such as Salary.com and Payscale, which crowdsource compensation data for anyone to see. By collecting anonymous data on tens of thousands to millions of salaries, these tools let workers compare their salary against those for similar jobs by city, tenure, industry, and even company.

7. THE HR CHALLENGES OF DIGITAL TRANSFORMATION

"HR needs to understand and exploit the platform throughout all aspects of their workplace."

S J Raj, Newgen Software Technologies Limited

Digital transformation is tackling every aspect of businesses.There's no industry that isn't tackled by digitization. Companies that aren't moving on with the digital transformation are already behind and will most likely fail to survive. The key HR challenges of digital transformation are:

1. Creating a digital company culture

If the company is set to adopt a digital strategy, it should first revise its company culturemaking it more flexible for adopting new digital solutions.HR should organize various trainings, conferences, and similar experiences that explain the new processes the company will be adopting. Employees should be aware of the digital tools to be used in everyday work and should encouraged to adopt change and take action that drives towards a better organization.

2. Management struggles

Managers will have to transform their management styles according to the new company culture. This will be challenging, especially for more experienced managers who have been pursuing the same management style for years. Managers have to support every employee of the company, regardless of the hierarchy level they are at. Now, the strict hierarchy should be replaced with a more flexible and innovation-oriented approach.

3. Transforming HR processes

HR processes should also be adjusted to the new business strategy. Training and on-boarding processes should be simplified. Create a reward scheme that promotes innovation and better performance. Skills training should also be digitized. It's also very important to focus on employer branding.

4. Personalize employee experience

HR professionals, should make sure the team cohesion exists, and be able to answer to employees' individual needs. Every employee has different goals and expectations, and it has to be alignedwith the company culture. The challenge lies in the automatization of all processes.

5. Finding the best talents

Finding the best talents in geographical area will become harder as employees are required who are experts in more advanced technologies. That's HR professionals should leverage the opportunities of digital transformation and turn to more out-of-the-box solutions.

8. CONCLUSION AND SUGGESTION

"When digital transformation is done right, it's like a caterpillar turning into a butterfly, but when done wrong, all you have is a really fast caterpillar."– George Westerman

Digital transformation is no longer a niche, it has become a necessity across industries. The fast-paced technology is transforming the way organizations work. World of HR is also changing rapidly with the advent of digital in the workplace. Organizations are demanding more control of their development and real-time employee analytics is becoming essential for internal growth. HR officials generally called as Digital HR play a crucial role and are aware of digital transformation's evolutionary effects. Hence, just upgrading the technology is not enough. One needs to change the processes as well. Whether it is analyzing multiple sources of

data within seconds, providing feasible solutions, or calculating the ROI on various employee initiatives, digital HR is the key to quick and informed strategy and decision-making.

- The role of HR teams in digital transformation is twofold:
- It is responsible for its own transformation – using automation and digital, data-led processes.

In collaboration with the IT department, HR is now being asked to lead organizations towards digital transformation and support its continual digital evolution. This involves empowering employees with a digital mindset to improve workforce processes and enhance productivity.

HR people are on the front line of this process. They are the ones that should initiate the creation of a digital strategy and the automation of company processes. However, not everything is so smooth. The role of HR in digital transformation processes isn't always so clear. They should be involved in transforming the business model, updating the working processes, optimizing the human relations in the chain, etc.Successful transformation will happen only if the company copes with the human challenges accurately. Technical operations should, in fact, be left as a second priority because even though digital transformation is about new technologies, humans are always the most important resource of the company.

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Drone Technology: History, Application and Current Scenario

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Abstract: Over the past few years, unmanned aerial vehicles (UAV) or drones have been a subject of interest in comprising technology, security issues, rules, and regulations globally. It is because of its preeminent advancements and uses in remote sensing and photogrammetry applications. This paper highlights the enhancement and evolution of UAV, categorizing, and collation of UAVs, applications in both Military and Civil Society. UAVs vast growth in the Indian market. The safety and security rules related to drones, existing regulations, and guidelines to fly the drone in several countries have also been discussed.

1. WHAT IS DRONE TECHNOLOGY?

A drone can be termed as an unmanned aircraft system (UASs). In essence, a drone is essentially a flying machine that can be controlled or fly independently through software-controlled flight plans which are embedded into their systems, working in conjunction with onboard sensors and GPS.

In recent years, UAVs were mostly accompanying the Defence. Formerly they were used for intelligence gathering anti-aircraft target practice but later on, more contentiously, as weapons platforms. However, in present times they are also being used in a wide range of non-combatant roles ranging from surveillance, search and rescue, weather monitoring and firefighting, traffic monitoring, to particular and individual drone-based businesses like photography, as well as videography, agriculture and even delivery services.

2. HISTORY OF DRONES

In the year 1935, drones appeared for the first time as a full-size retooling of "Queen Bee" biplane of the de Havilland DH82B. This drone was fitted with a radio and servo-operated controls in the back seat. The plane could be easily controlled from the front seat, but generally, it flew unmanned and was shot at by artillery gunners in training. The terminology of the word drone originated from a play on the "Queen Bee" nomenclature.

UAV technology was of constant interest to the military, but it was often too unreliable and costly to put into operation. After concerns about the demolition of surveillance aircraft arose, the military revisited the topic of UAVs. The military soon started expanding the use of drones to play vital roles in dropping leaflets and acting as spying decoys.

2.1 Modern drone history

In 2006, The United States Customs and Border Protection Agency started monitoring the U.S. and Mexico border by introducing UAVs in their force, which resulted in the widespread use of drones.

Later in late 2012, the editor-in-chief of Wired magazine, Chris Anderson, retired to devote himself to his drones company, 3D Robotics, Inc. (3DR). The company 3DR started by specializing in hobbyist personal drones. Now it markets its UAVs to construction, utilities and telecom businesses, aerial photography and film companies, and public safety companies, among others.

3. TYPES OF DRONE

There are four major types of drones.

- Multi-Rotor Drone
- Fixed-Wing Drones
- Single-Rotor Drone
- Hybrid VTOL

3.1 Multi-Rotor Drones

These are the most common types of drones which are mostly used by professionals. They can be used for most general applications like aerial surveillance, aerial video, and photography. Based on aerial platforms, multi-rotor drones are the easiest among other drones in the manufacture and often are the cheapest option available as well. Multi-rotor drones can be further categorized based on the number of rotors used by the particular platform. These include Tricopter (with 3 rotors), Quadcopter (with 4 rotors), Hexacopter (with 6 rotors), and Octocopter (with 8 rotors). Quadcopters are the cheapest, most popular, and widely used variant.

Although these drones are easy to build and relatively cheap, multi-rotor drones have many drawbacks. The prominent ones being it is less and limited flight time, limited tolerance, and flight speed. Hence these rotor drones are not suitable for

massive and large-scale projects like long-distance aerial mapping or surveillance.

3.2 Fixed-Wing Drones

Fixed Wing drones are utterly different in design and build to those drones with multi-rotor. They are somehow similar to regular airplanes because of their 'wing'. Fixed-wing type models never consume power to float on air against gravity, unlike the Multi-Rotor Drones. Instead, they move forward on a particular course set by the guide control until its energy source permits.

Most of the fixed-wing drones have an average flight time of several hours. Although drones powered by gas engines can have a flight time up to 16 hours or higher. Because of their higher flight time and fuel efficiency, these drones are ideal for long-distance operations. They cannot be used for aerial photography due to the lack of ability to stay still in the air.

3.3 Single-Rotor Drones

Single rotor drones are somehow similar to actual helicopters in design & structure. These drones have a big sized rotor on top and a small-sized one on the tail of the drone. This small rotor helps in controlling its heading. These drones are much more efficient as compared to multi-rotor versions. Not only do they have higher flight time, but they can be powered by gas engines also. In aerodynamics, the count of rotors is directly proportional to the spin effect the object will experience; higher the count of rotors higher spin it will experience. This is why quadcopters are much stable in comparison with octocopters. Hence, single rotor drones are much more efficient than multi-rotor drones.

3.4 Hybrid VTOL

As the name suggests, it is a hybrid version of combining the benefits of Fixed-wing models and the rotor-based models. However, with the advent of new generation sensors, this concept has got some new life and direction.

A vertical lift is used, which helps the drone to lift into the air from the ground. Gyros and accelerometers work in automated mode that helps the drone to stabilize in the air while a remote controller is used to guide the drone on any desired course.

4. DRONE MANUFACTURERS

Commercial drone manufacturers include:

- 3D Robotics
- DJI
- Elistair
- Hubsan
- Insitu
- Measure
- Parrot
- PrecisionHawk
- Yuneec

Drone Name	*Developer*	*Weight*	*Duration*	*Cost*	*Camera*
A.R. Drone	Parrot	420 grams	15 min	300 $	720p HD
Scout	Aeroyn Labs.	1300 grams	25 min	30k-50k $	1080p HD
MD4- 1000	Microdrone GmbH	1800 grams	88 min	50k $	720p HD
Dragan Fly X8	Dragan Fly Innovation Ltd.	1000 grams	20 min	25k- 30k $	1080p HD

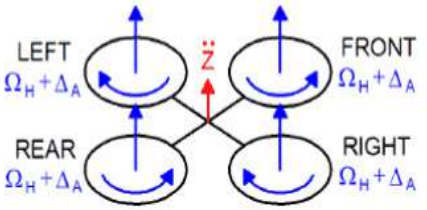
4.1 A.R. Drone

This drone comes with plastic quadcopter which comes with 4 plastic rotors. The 2 styrofoam bodies are included [9]:

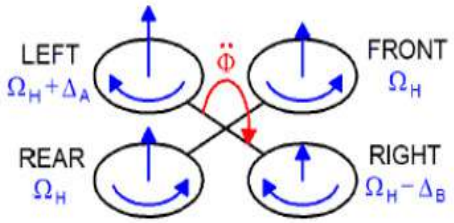
1. An indoor part with the foam rings that surrounds the rotors
2. An outdoor part which keeps the rotors exposed.

4.1.1. Architecture of A.R. Drone

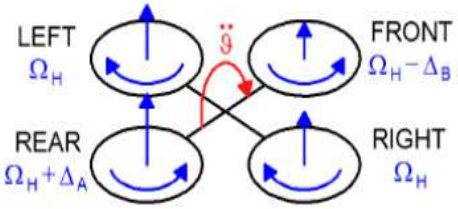
AR.Drone is a quadrotor which contains 4 plastic rotors. The mechanical structure of the A.R. Drone contains four rotors which are attached to fourends of theintersection to which all the battery and the Radio Frequency hardware are also connected.Each of the pair of opposite rotors is rotating in the same way. One of the pair of rotors is rotating clockwise and theother one as anti-clockwise.



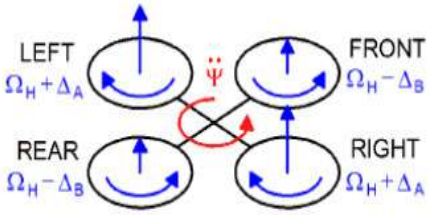
(a) Throttle



(b) Roll



(c) Pitch



(d) Yaw

4.2 Scout

This Drone named as scout is a small, durable drone which is capable of taking many large mapping projects and keeping it light and portable at that time. It's a low weight and highly efficient drone and can take off and land in very confined places.

4.3 MD4- 1000

4.3.1 Benefits

- Low maintenance costs
- Extremely resistant to heat
- CFD-optimised propeller
- Lower air turbulence
- Low service costs
- Lower costs compared to traditional manned aircraft

4.4 Dragan Fly X8

Specification:

- Light Weight 1000 grams
- Climb Rate 2m/s
- Max Height 8000ft
- Sound 65dB

- Launch Type: VTOL

5. DRONE APPLICATIONS

- Drones can be used as a helping hand by the farmers to measure and record the height of crops. A remote sensing technology called Lidar can be used to illuminate the crop with a laser and calculate the distance by measuring what is reflected.
- Drones can be used to take air quality readings, detect specific microorganisms or atmospheric elements in unsafe areas using their intact biological sensors.
- During wildfires, drones can inspect the range of the affected areas and determine how quickly the fires are extending. Photographs taken can provide details of the damage that occurred in specific areas.
- Sports networks also use drone technology to capture their event footage, such as taped and live flyover footage, that would otherwise be difficult to acquire. The use of drones must follow the regulations provided by the FAA, the sports leagues, the venue, and local law enforcement.

6. DRONES IN 2020 AND FUTURE

It's been more than two decades since the drones are in use, but their roots date back to World War I when both the United States and France worked on developing unmanned airplanes. Nevertheless, in recent times it has been significant in drone adoption, usage expansion across industries, and global awareness.

Within the evolution of commercial drone technology, we have encountered at least five significant stages. At first, the challenges began with the ability to fly drones reliably and regularly as needed. The moderate evolution resulted in industry-wide and business-specific solutions that contribute to organizational goals. The drone industry achieved essential elements of flight, equipment, and reliability in the early stages of growth. Later on, further stages came and continued at the forefront of research and development.

7. THE GROWING MARKET IN INDIA

During the 1999 Kargil war with Pakistan, India used its first military drones, which were supplied by Israel. This deal included IAI Heron and Searcher drones for reconnaissance. Since then, India has procured several Israeli military UAVs. India's Defense Research and Development Organization or the DRDO now develops its own domestic Unmanned Aircraft Systems (UAS) program. The project aims to develop a domestic arsenal which can replace, enhance and expand the existing fleet of unmanned vehicles.

- **DRDO Lakshya:** This is a target drone used for strategic aerial reconnaissance and target acquisition. It is launched by a reliable propellant rocket motor and sustained by a turbojet engine in flight.
- **DRDO Nishant:** Initially, it was designed for surveillance, reconnaissance, and intelligence-gathering in enemy territory. It can also be used for training, target designation, artillery fire correction, and damage assessment. This drone has concluded its developmental phase and user trials.
- **DRDO Rustom:** Rustom is a Medium-Altitude Long-Endurance (MALE) system. It is modeled after the American Predator UAVs. Like the Predator, the Rustom is designed to be used for both intelligence-gathering and combat missions. It is expected to replace the Israeli Heron model UAVs in the Indian Air Force on completion of its developmental and trial phase.
- **Aerial Photography:** Earlier, expensive helicopters and cranes were required for Aerial Photography, which was expensive, but in recent times, drones are being used to capture this footage. It also made cinematography easier as drones are being used to capture fast-paced action and sci-fi scenes.
- **Shipping & Delivery:** Companies like UPS, DHL, and Amazon have already introduced drone delivery. Drones could save much time and shift unnecessary road traffic to the sky. Besides, they can be used to deliver food, letters, medicines, beverages, and other small packages over minimal distance.
- **Geographic Mapping:** Drones are also used to capture high-resolution data and acquire imagery in hard to reach locations like mountain tops, coastlines, and islands. These can be used when someone wants to create 3 Dimensional maps and wants to give their contribution to different mapping applications.

8. GENERAL RULES OF FLYING IN DIFFERENT COUNTRIES

Based on the research and interpretation of the laws, here are the most important rules to know for flying a drone in different countries.

8.1 India

- All drones except those in the Nano category must be registered & issued a Unique Identification Number(UIN).

- A valid permit is required for commercial drone operations (except for those in the Nano category flown below 50 feet and those in the Micro category flown below 200 feet).
- Drone pilots must maintain a direct visual line of sight at all times while flying.
- Drones cannot be flown more than 400 feet vertically.
- Drones cannot be flown in areas specified as "No Fly Zones", which include areas near airports, international borders, Vijay Chowk in Delhi, State Secretariat Complex in State Capitals, strategic locations, and military installations.
- Permission to fly in controlled airspace can be obtained by filing a flight plan and obtaining a unique Air Defense Clearance (ADC) or Flight Information Center (FIC) number.

8.2 The United States Of America

- You must fly for hobby or recreation ONLY (no side jobs or in-kind work allowed).
- You must register your UAV with the FAA on the FAADroneZone website.
- You must fly within visual line-of-sight. You must never fly near other aircraft or emergency response efforts.
- You must follow community-based safety guidelines and fly within the programming of a nationwide community-based organization (CBO) like the AMA.
- You must fly a drone under 55 lbs. unless certified by a community-based organization.

8.3 Russia

- All drones weighing more than 250 grams (.55 pounds) must be registered.
- Fly only during the day with clear weather and visibility.
- Drone pilots must maintain a direct visual line of sight with their drones while flying.
- Do not fly over people or congested areas.
- Do not fly over sensitive areas such as military installations.
- Flights are not allowed on the Moscow Kremlin and Red Square.

9. COUNTRIES IMPORTING DRONES

Despite the fact that the drone business is expanding, it only makes 0.3 percent of the global arms trade. During the period 2010 and 2014, 35 countries across the world imported UAV systems, with the total number of drones shipped to 439. In this number, a mere 11 of those drones were armed.

Around 11 armed UAVs were exported by the U.S. and China. Also the U.S. supplied six General Atomics MQ-9 Reapers to the United Kingdom for use in Afghanistan. In contrast, China exported the other five to Nigeria to boost its efforts in fighting Boko-Haram. The market for armed drones is set to expand as the U.S. announced it would begin selling armed Predator and Reaper drones to more friendly and allied nations.

Britain imported 34 percent of UAVs between 2010 and 2014. In addition to those six-armed Reapers from the U.S., the U.K. also imported around 55 drones from Israel. Since 1985, Israel has exported the majority of unmanned aircraft worldwide, some 60.7% of the world total, ahead of the United States, who have 23.9% of the market. In case of importers, India comes second after the U.K., by importing around 13.2 percent during 2010 and 2014. Italy ranks third by taking delivery of 9.8% of the 439 systems.

10. CONCLUSION

Inevitably enough progression has been followed in the development of Drones. Observing drones in the sky will remain important for the forthcoming future. They will evolve and undoubtedly be more comfortable to operate. The ease of flying and taking pictures can screen the very fact that questions regarding how to use those pictures will not get any easier with higher sensor resolutions, better lenses, or cheaper memory.

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Reaping the Benefits of Digital Economy

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Abstract: We all are in the era of pioneering changes. Key technologies are transforming the way of working of economy and sparking a new wave of value creation. Digital Economy is critical for growth, global competitiveness and social enhancement. India is positioning itself in a significant way to become fully digitalized .Digital Revolution is affecting all sectors of the society. Digital economy is catalyst for innovation and comprehensive growth. It assists in unlocking human potential and accelerating new and better ways of working. The digital revolution has transformed our lives and societies with remarkable speed and scale, delivering mammoth opportunities as well as frightful challenges. Digital Economy does not occur in isolation; it is shaped by government, industry and community. The objective of this briefing paper is to examine the digital economy and the challenges that will need to be managed to nourish the digital economy.

Keywords: Pioneering changes, digital economy, comprehensive growth, digital revolution, frightful challenges.

1. INTRODUCTION

The Fourth Industrial Revolution led by new digital and physical technologies has huge implications for the economy and society. We are in the midst of digital age. Today's web, social and mobile technologies are combining to deliver best in every aspect of personal or professional front. The digital economy is high on the agenda of public policy debates in many countries. We all are adopting technology and taking up the new opportunities to connect, collaborate and transact more effectively. Many businesses are incorporating the digital tools to make their business more productive and efficient, and reach new audiences. The digital economy also helps in creating jobs and support new business opportunities. The digital economy is about the activities that networked technology makes possible. It is the demonstration of how the whole is greater than the sum of its parts.

In this regard we need a overview highlighting the importance and key challenges of digital economic development.

2. DIGITAL ECONOMY

The concept of 'digital economy' was introduced in 1995, by Don Tapscott. In his book, 'Digital Economy: Promise and Peril in the Age of Networked Intelligence', Tapscott predicted how the internet would change the way business was done and create an economy built on networks. The twenty-first century movement towards advanced technology in telecommunication, information, and innovations brought up the concepts of digital technology and digital economy [1].

Digital economy is an economy based on digital technologies and the primary use of information technology hardware, software, applications and telecommunications in all areas of economy, including internal and external activities of organizations [2, 3].

We can explain digital economy as an economy based on professional and market knowledge, creativity, and an innovation society. Digital economy is a paradigm of global information society that is centered on technology platforms, such as the Internet, mobile or other electronic devices, used for producing, distributing, exchanging and consuming goods/services in global markets [1, 4]. The dramatic advancement of the Internet has generated the digital economy, which has provided us with extraordinary services and welfare never anticipated before [5].That part of economic output derived solely or primarily from digital technologies with a business model based on digital goods or services [6].

Another approach is to view the digital economy as encompassing all the ways in which digital technologies are diffusing into the economy [7].The share of total economic output derived from a number of broad "digital" inputs. These digital inputs include digital skills, digital equipment (hardware, software and communications equipment) and the intermediate digital goods and services used in production. Such broad measures reflect the foundations of the digital economy [8].

In nutshell, digital economy can be defined as an economy that focuses on digital technologies, i.e. it is based on digital and computing technologies. It essentially covers all business, social and cultural activities that are supported by the web and other digital communication technologies. The main building blocks of the digital economy are:

- The internet: This enables firms to offer goods for sale and ease the consumers to browse for goods that they need.
- E-mail: Electronic communication enables serves the purpose of cost effectiveness and instant communication across the world.
- Digital automation: It refers to automation of business process. It makes the process efficient and brings new value to the customers.

- Digital payments: It is a way of electronic payment. These are conducted over the internet and mobile channels. A digital economy is moving us towards a cashless society.
- Social media. It is shaping the digital economy especially through sharing recommendations about business.

3. TECHNOLOGIES THAT CONSTITUTE DIGITAL ECONOMY

- Transactional technologies: E- commerce platforms provides digital infrastructure and reduces the gap between market supply and demand.
- Information Technologies: Artificial Intelligence, Cloud Computing, Big Data Analytics are the facilitators for improving the digital infrastructure. It provides new avenues to the data.
- Operational Technologies: Internet of Things (IoT), Smart Robots, 3-D printing paves the way for digital economy.

4. IMPORTANCE OF DIGITAL ECONOMY

The digital economy is highly dynamic. It will ultimately encompass the entire economy and many, if not all, facets of our society. The digital economy presents opportunity to shrink the distances that have historically dominated our domestic and international relationships, opening up new markets for engagement and growth. In addition, it will continue to change how we interact and socialize—people can now connect, collaborate and participate online in previously unanticipated ways that enrich their lives. The impact of the digital economy will also include new and emerging uses of technology, such as remote specialist diagnosis of patients, as well as uses that we cannot even begin to imagine. For the success of digital economy digital infrastructure is a key input just like electricity, gas and water. However, to fully develop the digital economy, world-class digital infrastructure by itself is not sufficient. Digital intelligence is new economic resource for creating value. Data is the new oil which will grease the economy through digital intelligence. Controlling and capturing data is of strategic importance. Processed and filtered data will provide a competitive edge to strengthen the digital economy.

5. PRIORITIES FOR DIGITAL ECONOMY

1. Adapt Ecosystem Mind Set: We must develop strategic priorities based upon disrupting technologies.
2. Data; the new oil: To compete effectively in this world we need large amounts of data and developing capabilities for storing, processing, and translating the data into actionable business insights.
3. Connecting with Customers: To win the trust of customers it is important that we establish an emotional connect with the customers. Data, customer pain points are the headway to connect an emotional tie with customers.

6. THE ROLE FOR GOVERNMENT

Digital economy requires action by government, industry and the community as a whole. Government's role is to fill a gap left by the market, address social inequity, protect the community, assist markets to work fairly and efficiently, and address market failures. Government must play the role of a facilitator—facilitating individuals, households and businesses to take up the opportunities the digital economy offers. To harness the benefits of digital economy government need to undertake structured efforts. Devise digital agendas at national and regional levels to promote the digital economy.

At national level, the structure and architecture of the digital economy and its components need to be compatible with country needs and its level of infrastructure and digital maturity. A national agenda for the digital economy must focus on the local attributes of the wider economy and society rather than those of other countries; policymakers must resist the temptation to imitate the experiences of other countries. Digital agendas should also focus on promoting gender equality in access to resources, capacity-building and literacy, and other projects that empower individuals in the digital economy. Digital agendas should focus on keeping pace with modern technology developments, such as the Internet of things, cloud computing, big data, digital signature, digital money and digital authentication.

7. ADDRESSING MAJOR DIGITAL CHALLENGES

To make digital economy a success all the stakeholders must participate enthusiastically. Government must play the pivotal role in creating and shaping digital economy. Private and public sector must work hand in hand to address the concern. Following are the key areas:

1. Filling the gap of digital divide: Around 60% of the world population is still offline and measures need to be taken to get them connected to the digital economy. So the first major concern is limited digital connectivity. There must be affordable internet services for all. ICTs need to be integrated into national policies. In doing so, it must be ensured that no one is left behind by technological advances and we will put the human being at the centre of the technological evolution.
2. Allowing New Entrants: For the easy and affordable internet accessibility it is requisite to make the market competitive. These should be minimum barriers on new entrants. Government must develop and opt new business models. Strengthening capacities and developing skills will require action to be taken by all the community and partnership involving different players in the ICT ecosystem. New models and rules of innovative partnership must be explored.
3. Tight but light regulations: We must accept that all we need is more accountable and decentralized system. The objective of the regulatory body should be to ensure that

there is market competition, prevention of market failures and protection of consumer interest. To achieve this, regulators should create low entry & exit barriers, dispel fears around new online businesses and encourage their growth, promote innovation, and eliminate tariffs and other protectionist policies that prevent competition and protect market incumbents.

4. Skill Development: In the digital economy digital skills are the key for new employment and better business opportunities. Information and communication technologies (ICTs) have changed the skills requirements for the digital economy and society. Equipping a nation's workforce with technical skills, and fostering a culture of continuous innovation are foundational ingredients that can help governments and all public sector organizations.

8. CONCLUSION

While the digital economy creates significant opportunities for companies, it also escalates the threat of breaches in cyber security, misuse of intellectual property and reputational damage from open communication on the web [9].The task of transforming economy and society into a successful digital economy is a significant one that requires a long-term focus.

1. Involve the private sector in the transition towards digital economy. Advancing towards the digital economy must be designed by public policymakers but part of it must be implemented by the private sector. This can take a public-private partnership approach or an ordinary free market model, according to a proper and suitable economic governance structure.
2. Improve fixed high-speed broadband access technologies to provide a quality experience for users. Beyond penetration rates, quality of access is of extreme importance for the digital economy. Quality in relation to the speed of Internet access and download volumes.
3. Improve research and development expenditure in ICT by all stakeholders, particularly the business sector. Digital economy need to set quantitative targets, with support measures and monitoring of global research and development expenditure.
4. Put forward national strategies and laws to protect human and data privacy. The lack of such protection will discourage people from utilizing digital economy services. Data breaching and the perception of data breaches must be addressed well in time.

The aim is to contribute for building a digital ecosystem that is sustainable, inclusive and trustworthy that can support a healthy and thriving digital world.

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"Viral Marketing: A Powerful but Tough Marketing Tool"

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Abstract: ***Today's marketing strategies formulated by marketers around the globe is flooded with mass marketing and consumers are continuously exposed to different brands through various medium. The rapid growth of digital media helps businesses to spread viral messages to the mass market; like viruses. It is very powerful technique to be used to increase brand awareness of the organization. Viral marketing is a marketing technique where the information about a company's goods or services is passed electronically from one internet user to another. In the recent past, viral marketing technique has achieved increasing attention and acceptance all over the world including India. The purpose of the research is to investigate the positive or negative influence of viral marketing for the marketers. At the end of the study there is a design part in which we find suggestions and recommendations for improving the use of viral marketing. These suggestions and improvements are tailored to new methods that combine with viral marketing innovations, along with the inclusion of the Internet and social networks that make viral marketing the most effective marketing strategy tool.***

Keywords: Viral Marketing, Word of Mouth, Viral Marketing Model, Viral Marketing Campaigns (VMC)

1. INTRODUCTION

Internet, the recent revolutionary transformation in communication technology, has offered wings to the mass promotion strategy of businessmen, as customers can pass on the information to thousand others in a very short span and with almost no cost. World has become smaller and tremendous marketing opportunities are now available to businessmen. Marketers all over the world accept and appreciate the fact that viral marketing is the new 'Mantra' to open the treasure cave of business success. In the recent past, viral marketing has created a lot of buzz and excitement all over the world including India. The concept seems like 'an ultimate free lunch'- rather a great feast for all the modern marketers who choose small number of natives to plant their new idea about the product or activity of the organization, get it viral and then watch while it spreads quickly and effortlessly to millions of people.

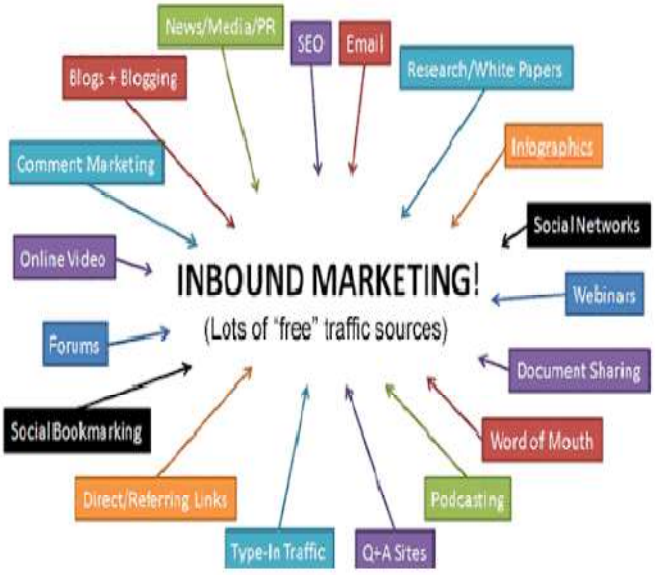

Fig. 1. Types of Viral Marketing

Viral Marketing is a marketing technique where the information about a company's goods or services is passed electronically from one internet user to another. In internet and online advertising, viral marketing is a type of marketing that relies on and encourages people to pass along a marketing message by word-of-mouth (or word-of-email) marketing. Viral marketing on online uses blog and social networks to produce positive word-of-mouth brand awareness. Viral marketing is very much like "WORD OF MOUTH" marketing except it is conducted over the Internet. One form of viral marketing is a recommendation to friends to others. The marketing message spreads through the showing and passing between and to individuals. The viral marketing plays a vital role in the business or company to promote their product (goods & services). Some of the authors say that viral marketing is Virus marketing; it spreads one message virus in the marketing. The viral marketing comes under the social circle. This marketing helps to the producer to give information about his product (goods & services) with free of cost. In this paper we will study how viral marketing is growing with the growth and evolution of the internet, electronic peer-to-peer referrals have become an important

phenomenon, and the marketers have tried to exploit their potential through viral marketing campaign. Word of Mouth publicity is a centuries old marketing techniques. Technology makes the spread of product knowledge from one person to another faster and more efficient.

2. LITERATURE REVIEW

The word "viral" has roots in the word virus. The term "viral marketing", therefore, viral marketing is derived from the properties and characteristics of viruses that are rapidly spreading and infecting. Virus infestation has long been shifted from person to person. Otherwise, it is not even in viral marketing when a message, link, or information moves like a virus from one person to another, either by word or media (Stanek 2011). The concept was first used in 1997 to explain the above-average growth in the use of Hotmail, which has accumulated over 12 million people over a surprising 18 months, with the company spending less than $ 500, 000 on advertising. So the branding of this company as the basis of the current viral marketing will not be at all. What was the success of this business is no secret at all. It was an ad at the end of each email sent from this Hotmail, saying: Sent from my free account. Get Free Email Account with Us! (Akdeniz 2015). The virus, as we all know, spreads very quickly, from person to person. And that's why viral marketing is named after him. The word "viral" is based on the word virus, so this type of marketing has the characteristics of the virus, but one of the most important, namely the speed of dissemination where information is transferred by word, internet, media from one subject to another (Stanek 2011).

What is Viral marketing? – By Seth Godin, In his book, Seth Godin explains about what is viral marketing i.e., how viral marketing is, “an idea that while it is spreading actually helps market one’s business or cause.” He says that the main critical element of viral marketing is “it’s built in, ” i.e. it’s built into hotmail, you tube etc. Seth Godin quotes that, being viral isn’t the hard part. The hard part is making that viral marketing actually produce something of value not just entertainment for clients.”

Viral marketing 100 success secrets – By Kevin Allen, the author of viral marketing 100 success secrets, discussed about secret strategies, buzz marketing tips and tricks and interactive marketing. This book provides an easy way to understand yet comprehensive view of using viral marketing. Also, the author provides an answer to where and how to start viral marketing. In today’s world, technology is changing and new tools are developing almost every day. To answer all these questions, the book takes a high altitude look at viral marketing options, showing us how it is developed, why it is important, how it works and why viral marketing works. The book actually shows us how to use the tools and implement programs.

3. OBJECTIVES OF THE STUDY

1. To study the basic concept of Viral Marketing.
2. To understand and examine the impact of Viral Marketing on consumers.
3. To analyze the advantages and disadvantages of Viral Marketing
4. To provide suitable suggestions for the marketers to use Viral Marketing Campaign wisely.

4. RESEARCH METHODOLOGY

Considering the very nature of the subject, this research paper is conceptual in Nature. It is based on secondary data the information which is taken from secondary sources basically includes the websites informing about the cases of viral videos and commercials of the business and non-business organizations from various countries including India. In addition, few books and periodicals containing information about viral marketing were also taken into account.

5. IMPACT OF VIRAL MARKETING

To survive in the competitive world or to adapt to the surroundings, several business strategies have been used by the organizations to cater to the needs of the market. Among such strategies, viral marketing is one of the smarter and faster forms than traditional form of marketing. These days, people share their good and bad experiences about particular products or services over the internet and give recommendations to others. People get hold of the right products and generate reactions quickly and easily. YouTube advertisements cost a fraction as much as a TV commercial, but if it motivates people to share message, it can have major impact on brand recognition. Social media networks such as Face book, Instagram, twitter, LinkedIn, Google+ and You Tube are the main sources of viral marketing strategy. Viral marketing is one of the least expensive options for any business organization to promote the products. It can either help in making organization’s reputation as the most successful or happening one or break an organization’s image. More the number of people come across this type of advertising; the greater is the potential for success. The importance of viral marketing is heavily backed by being able to use networks, creativity and imagination. Viral marketing is an attractive alternative for organizations rather than purchasing mass media to spread the word. In today’s world of digital marketing, no other marketing than viral marketing is in a trend. Business organizations can resort to Pass-long, Buzz marketing, Incentive viral, Undercover marketing, User managed database, for spread of messages. Renowned marketing philosophers Kaplan and Michael Haenlein have emphasized on giving a right message to the right messengers in the right environment, which is the key to success for any business organization. India is set to become the world’s fastest growing e-commerce market. The rapid growth in new internet users in the country and heavy investment in the e-commerce industry has fuelled the growth story. Internet users in India have grown on a fastest rate. Morgan Stanley Report

says that the size of the Indian internet market is rise up $137 billion in 2020.

6. VIRAL MARKETING MODEL

For understanding the model let's take a look of Brand association through the Viral Marketing Model (BAVM) diagram in detail. When a brand is broadcasted through a media (1), such as television, radio or internet, the message about the product is spread and giving out a brand awareness and association. Thereafter, this message is seen by the individual and network (2), every network consists of several individuals, and either creates a positive or negative opinion. Since individuals with different opinions meet in networks, a discussion starts about the marketed brand, product or commercial. This discussion can change the opinion about the brand, product or commercial from positive to negative or vice versa. The discussions reach back to the individual, who can react in two ways. Either, the individual do not respond to the commercial (3A) which give no reaction in purchasing, using or further discussion. Or the individual respond to the commercial (3B) which results in a purchase of the product, use the service and/or further discussion of the commercial and its message(4). This is the only action the consumer can take, because if they do not purchase, use or discuss the product no other actions can occur and the individuals do not respond to the message (3A). The further discussion returns to the network (2) and creates further brand awareness and association, thus become a viral marketing. In some cases a marketed campaign is not intended to be a VMC campaign but becomes one, because of a specific message or form of the commercial.

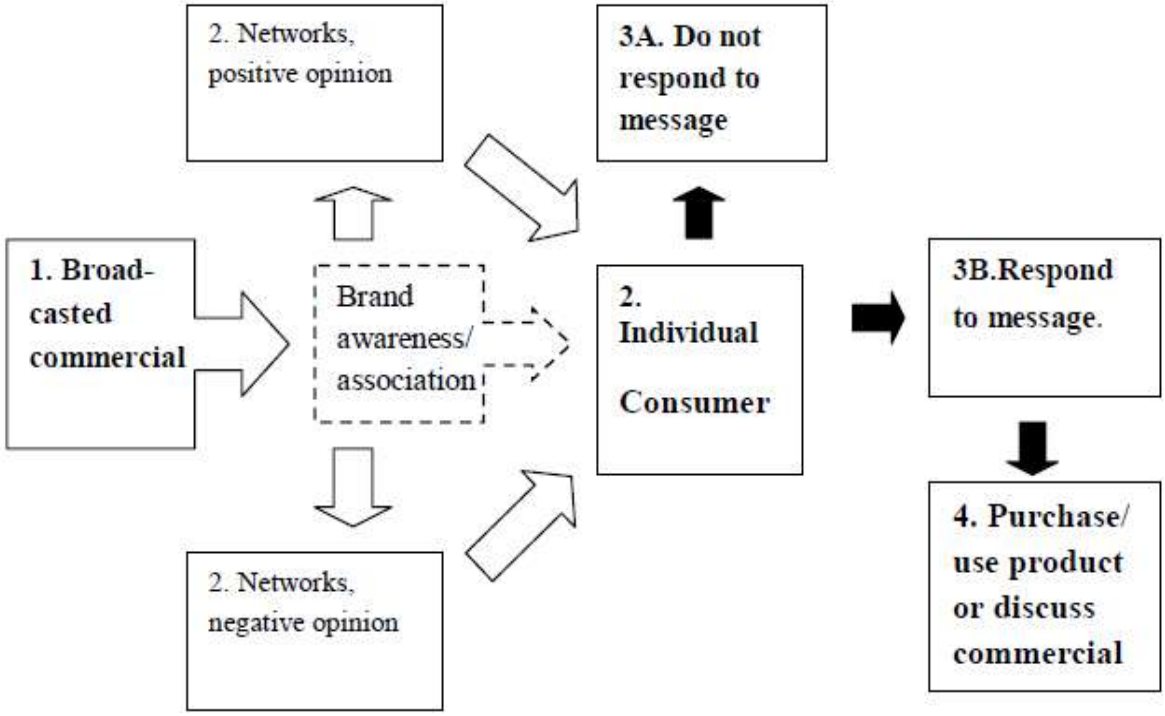

Fig. 2. Brand association through the Viral Marketing Model (BAVM)

7. ADVANTAGES OF VIRAL MARKETING

1. ***Instant Awareness:*** Viral marketing can be important in launching a new product by getting your brand in front of large potential market quality.
2. ***It Builds More Credibility:*** As more and more people in the entire network talk about and recommended your brand, more credibility is built. This is so because your company endorsed by more and more people to their friends and close associates as your message goes viral.
3. ***Make It Easy:*** It should generate a reaction quickly and easily, such as laughter, surprise (or) stock. If you have a strong online presents, seed it with your biggest fans first to get them to spread for word you.
4. ***It Keeps Your Business Green:*** Viral marketing helps to keep your business a float. If your business has already earned more credibility, people will continue to patronize your brand and ensure your business stability.
5. ***Control Factor:*** The biggest risk is not the possibility that a campaign will fall flat, but the loss of control that a viral marketing campaign necessitates.

8. DISADVANTAGES OF VIRAL MARKETING

1. **Viral Marketing Campaigns Are Tough to Create:** Viral Campaigns have to be original relevant and balance the companies brand and commercial message with being funny gross and etc.
2. **Viral Marketing Campaigns Hard to Measure:** To make things worse, many viral marketing campaigns difficult to measure. Videos are copied and messages are repeated. After a while it may be difficult to discern the original message from the buzz.
3. **Viral Marketing Campaigns Are Uncontrollable:** While a company has full control over paid advertisements, Viral Marketing campaigns cannot be turned off once released. This viral are controlled by the mass.
4. **Viral Marketing in Brand Recognition:** The digital media capabilities can help business to spread viral messages to the mass market like virus.

9. SUGGESTIONS AND RECOMMENDATIONS

The following are the Suggestions and Recommendations made for the present study.

a. Marketers need to concentrate more on the online social networking sites rather than traditional media like television and newspapers.

b. Marketers should ensure that the product quality is good before placing goods in viral marketing otherwise, it may backfire.

c. Low internet speed was the major problem faced by the customers the advertisers should upload and content that can be viewed easily.

d. Marketers should provide a wide range of products for the viral marketing and should use high quality packaging and wrapping. So that the similar kind of product will reach to the customers.

e. Shopping sites should avoid selling harmful or dangerous products, and fake and counterfeit products.

f. Viral marketing shopping is still a touch-feel-hear experience, the retailers need to create a similar environment as it is in a physical store by creating novel web designs and portals sophisticated web atmosphere, e-mail updates and live interaction over the internet.

g. The companies should adopt the best available technology to maintain online security and should conduct regular audits to ensure that the integrity of their sites is maintained in order avoid hackers getting into business sites and causing loss of trade secrets and proprietary information.

10. CONCLUSION

Traditional marketing is no longer in place. It is obsolete, ineffective than when you are, and especially unattractive to today's consumers. The global population is no longer overwhelmed with old and frightened advertisements, billboards, posters because it is already part of their everyday life. It's a routine. Companies need to realize that today's consumer is smart, has the knowledge of how they work, that is, before purchasing, they discovers as much information as possible about the product, an Internet service where there is an unlimited amount of information and selection options. Assuming a knowledgeable customer is necessary for today's sales. What we can take as a fact that we need to use new resources, catch up with the latest trends and stick to the most modern forms. We believe that VMC possesses immense potential as a marketing line of attack and in future, more companies will attempt to harness its power and reap the benefits of this internet tactic. It will be essential to perform more profound and thorough research into consumer behavior towards VMC to develop even more successful marketing and communication strategies in time to come.

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Neuro Finance- A Tool for Effective Decision Making

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Abstract: Present article is a conceptual research to document the importance of Neurofinance. Researchers have understood the concept and approach for the Investment Patterns of Buyers in any sector. This comprises of the data from secondary sources. From analysis it has been found that the Investment Pattern of individuals is based on their reaction and perception. The study identifies that the formal procedures and practices provide a striking substantiation of the brain activity associated with financial decision-making, thus showing the importance of Neurofinance as an influential tool for improved economic decision-making through brain mapping techniques. The findings help towards understanding the risk preferences and the wherewithal while investing. Neurofinance is an interdisciplinary area that attempts to elucidate the human decision-making, the neural activity that shapes the understanding of the brain, the adeptness in processing various alternatives available following a particular course of action.

1. INTRODUCTION

Neurofinance combines neuroscience with strategies to decode decision-making patterns and read the story in financial statements. Neurofinance is to take decisions and achieve growth and profits using brain sciences. Neurofinancial principals teach us how to take financial decisions f from the intuituion instead of from the brain. Thus one can deal with challenges in the business with more confidence because you know and can describe what is going on and the business sharpness to interpret it in the first place. It can be of great help in negotiations. Generally, when you are taking decisions in business finance, you have an idea as to how the other party will react to decisions that are made or courses of action that are adopted. When events don't happen in the manner that you had predicted, neurofinance gives us a ray of light and helps us better understand the why behind the behaviour. The principles you can learn from neurofinance gives you deeper, more meaningful insights into yourself and others. We can examine experimentally the nature of the cognitive processes engaged in acquiring and processing information in financial decision making. We study how people select action plans based on the acquired representations of the values of potential investment prospects. One of our goals is to identify what kind of information the human brain can process efficiently (and what kind it cannot), as well as the environmental conditions facilitating or hampering this information processing. Another goal is to better understand how investment decisions are tuned depending on the appreciation of distinct kinds of uncertainty, such as risk, jump risk, and estimation uncertainty (ambiguity and model uncertainty).

2. BEHAVIORAL FINANCE AND NEURO FINANCE

Behavioral finance emerged in the 90s to perfect the insights of mathematical finance. The point of departure of behavioral finance is that because classical finance assumes full rationality, it cannot explain many price patterns. Behavioral Finance can rationalize the complicated price patterns using examples from all behavioral sciences like cognitive neuroscience, psychology, sociology etc. Neurofinance is different and reflects recent advances in decision neuroscience. We're initially agnostic about the degree of rationality of people, i.e, we do not take people to be limited in their computational capabilities. Rather, we infer their degree of sophistication experimentally, from the observation of behavior and neural activity during cognitive tasks performed in the lab. These cognitive tasks replicate challenges that are routinely encountered in real world financial decision-making.

These challenges include:

- Learning asset distributions that jump over time
- Learning to avoid seemingly-glamorous but suboptimal investments
- Properly perceiving financial market returns
- Making everyday predictions about key financial phenomena such as price changes, etc.
- Develop acute prediction of investors' behavior
- Identify environmental markers of behavioral sophistication/irrationality in financial markets
- Create nudges to aid decision making

3. OBJECTIVES OF THE STUDY

1. To understand the concept of Neurofinance.
2. To analyse the effect of greed on financial decision making

3. To see how Greed affects Investment decisions
4. To understand how Greed and Fear together influence Investment Decisions

4. RESEARCH METHODOLOGY

The present paper is a descriptive research based on secondary data.

5. REVIEW OF LITERATURE

Top of Form

Bottom of Form

Initial work on the neuroeconomics of financial decisions focused on two areas of the brain that seemed to influence these decisions, namely, the *nucleus accumbens septi* and the *insula*, both part of the subcortical brain structure. In particular, U.S researchers Camelia Kuhnen and Brian Knutson, in a 2005 study using functional imaging (fMRI), scanned the brains of those who had to take financial decisions involving two stocks and one bond. Initially, The *nucleus accumbens* got active with the hope of reward, whatever its nature, whereas the *insula* gets active with negative feelings, i.e. nausea, disgust, anxiety or even the anticipation of pain.

Recent work carried at Ecole Polytechnique Fédérale de Lausanne, Switzerland, by Peter Bossaerts's team has highlighted differences between the perception of brain of financial risk and risk model of financial industry. While calculating risks, the brain not only learn from mistakes of past, it is even sensitive to rare events that financial models fail to consider.

The neurobiologist Antonio Damasio studied to generate optimal behaviour how decision making and emotional process interacted. He showed somatic signals move up from the depths of the limbic system toward the regions of the prefrontal cortex where the neural foundations of our thinking and decision-making abilities are situated.

From recent studies, we know that the orbitofrontal cortex (a part of the prefrontal cortex) is the area in the brain that operates as the interface between the evaluation of consequences of our choices (at the same time a calculation and a counterfactual reasoning, i.e what could I have got had I chosen otherwise?) and the emotions we feel when the results of our choices are understood.

Whether the person feels regret or disappointment differentiate the activities in the orbitofrontal cortex . When we are able to compare what we have with what we could have had we feel Regret. We feel Disappointment when we are not happy with the outcome without actually understanding what would have happened had we behaved otherwise. Orbitofrontal cortex shows significant activity only when we feel regret.

In the 1950s, the Nobel prize-winning economist Harry Markowitz had given the theory that the economic decision making is iinfluenced by interaction between hope for gain, or expected utility, and variance of risk interacted. The brain was able to analyze the degree of uncertainly in a probability distribution. Markowitz could narrow down to hope and variance, these two variables after looking at several risk-taking decisions simultaneously This simplified the process of revision and adaptation. It is a learning process.

Samuel McClure and David Laibson performed famous study in neuroeconomics in 2004 to explain disparities in intertemporal choices because of competition among these two broad regions within the brain. This is simple but accurate picture of how we yield to poor decisions, and it overshadows how emotions may more often than not contribute to rational and optimal decision-making.

In a report in the Quarterly Journal of Economics, Tano Santos and Ming Huang (2001) were able to explain returns patterns using a model in which investors care directly about stock returns, which may also explain why some investorsâ€™ brains get a kick out of earning higher returns or losing for the sake of it.

6. NEUROSCIENTIFIC DECODING OF FEAR AND GREED IN TRADING

How greed and fear are neurologically closely related to drug addiction

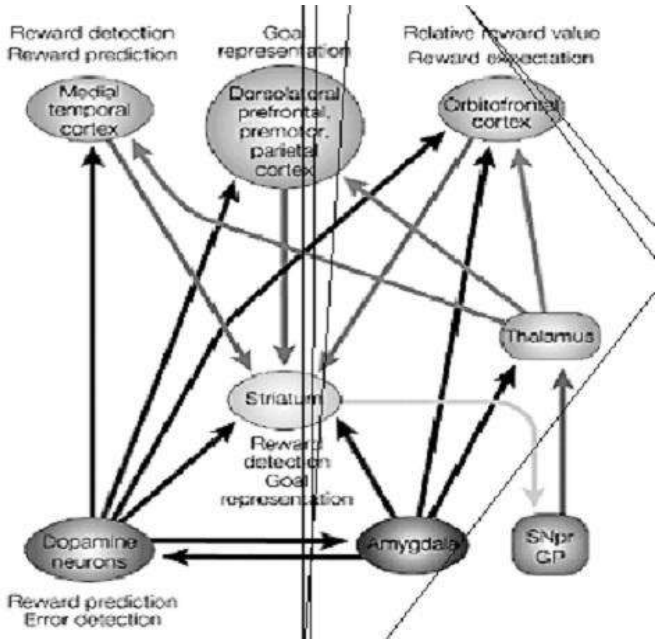
Neural experiments suggests that money activates the same dopaminergic circuitry of the brain in the midbrain (the mesolimbic system, a dopamine pathway), which is activated by a variety of other factors such as attractive people, alcohol, drugs or sports cars The traditional definition of greed in investing is when investors have an excessive desire to buy or sell, while fear is considered an emotion of dreaded anticipation of danger in the market.

Understanding Greed

Greed is classified in the context of cognitive motivation and positive emotion. But motivation itself, according to cognitive sciences, is divided into implicit and explicit . Explicit refers to unconscious, automatically operating motives, Explicit refers to motives and goals which are accessible for self-reports. Explicit motives are goals which are conscious, whereas implicit motives affect spontaneous, uncontrolled, and long-term behavior (without goal-planning behavior).

In a study led by Hans Breiter at Harvard Medical School and Massachusetts General Hospital, functional magnetic resonance imaging (fMRI) was used to determine which parts of the brain were activated when people experienced monetary gain or losses. In the research, Breiter and his colleagues were able to determine that when monetary gain increased, some specific brain activation occurred in the nucleus accubens (part of the striatum and reward system); the amygdala, which is associated with emotion; the hypothalamus, the part of the brain closely linked to the endocrine hormonal system; and the

ventral tegmental area, which releases dopamine into the reward system. Below is a graph that demonstrates the reward map.



*Thalamus functions are the relaying of sensory and motor signals to the cerebral cortex and the regulation of consciousness.

*In research, the amygdala has been shown to perform a primary role in the processing of memory, decision-making, and emotional reactions.

*The striatum helps coordinate body movements with motivation.

*SNPR stands for pars rituculata of subsantia nigra, which is located in the midbrain and plays an important role in reward, addiction, and movement. GP stands for globus pallidus, aka paleostriatum or dorsal pallidum, and is a sub-cortical structure of the brain. The GP is a structure in the brain involved in the regulation of voluntary movement.

After this research, Breiter realized that there is a similar neurological pattern in the money reward as in another study he did a few years prior with cocaine addicts and first-time morphine users. In a complete different, unrelated study (Berridge 1996), cognitive scientists Kent C. Berridge believes the later stages of many drug addictions presents prototypical examples of situations of â€œwantingâ€ without â€œlikingâ€ ; drug addicts often report an absence of pleasure from taking the drugs they are addicted to, coupled with an irresistible (implicit) motivation to do so. In other words, investors should carefully examine and monitor their greed in the market and treat it as any other negative addiction. Keep in mind that those related emotional and neurological response to reward do not only apply to excessive desire but to the perceived value of â€œwhat might have been.â€ For example, neurological imaging shows that it feels better to gain $0 when the unobtained alternative is $10 than when the alternative is $90.

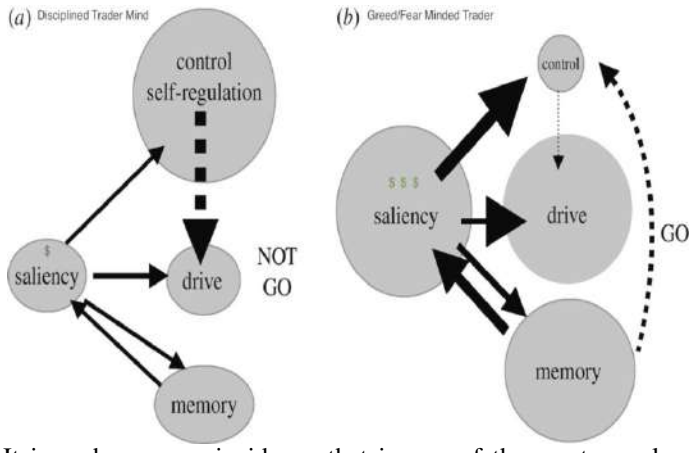
Understanding Fear

If monetary gain provides direct pleasure, then the experience of losing it or the fear of losing it probably provides direct pain. Greed and fear work in tandem. Although it took place over a century ago, Pavlov experiment on his dogs is still relevant in cognitive sciences to help understand fear conditioning, which is extremely relevant to investing. The â€œfight or flightâ€ response has helped humans survive for thousands of centuries, but financial threat is different than physical threat. Most of the fear experienced by investors and traders is conditioned. Fear conditioning is a behavioral model in which animals and humans learn to predict aversive events. It is a cognitive method of learning in which an aversive stimulus like a bad trading loss could be associated with a particular neutral context (e.g., Non Farm Payroll news) or a neutral stimulus (e.g., market volatility), resulting in the trader pairing NFP and market volatility with loss. Ultimately, the neutral stimulus (market volatility) alone can elicit a state of fear. Fear conditioning is mainly associated with the amygdala region of the brain. Specific interaction or deactivation of the amygdala may prevent both the learning and expression of fear.

Neurological Correlation Between Greed and Fear

According to a study done by neuroscientists at the University of Michigan, desire and fear are in adjacent regions of the brain (remember, greed is defined as excessive desire). Dopamine is the neurotransmitter that is mainly associated with the positive section reward system of the brain, but the study shows that dopamine is also involved in negative feelings like fear. The neuroscientists found a dual affect of dopamine in the nucleus accumbens (the NAc is part of the ventral striatum, which is a portion of the striatum showed in the above reward map graph). So the same region of the brain that motivates one to seek pleasure such as food, sex, drug, money is also closely related to fear. In the research done by Berridge, he was able to show that desire and fear were only separated by a few millimeters in the NAc. Just as greed can be addictive, so is fear. When people are in a state of fear they go into panic mode and are unable to make clear, precise decisions. It is a well-documented fact that sustained stress caused by fear has led to some well-known negative behavioral decisions in investing rather than cutting losses, or selling at the bottom and buying back at the top. The dopaminergic flow associated with the state of fear can become addictive and allows one to remain trapped in that state, preventing the individual to have the clarity to realize the behavioral dilemma (as is the case in most other addictions).

*The graph below demonstrates the difference between a well-balanced brain versus an addictive brain



It is perhaps no coincidence that in one of the most popular trading books, Trading for a Living, trained psychologist and trader Dr. Alexander Elder suggested that traders use AA (Alcoholics Anonymous) techniques to overcome their losing behavior in the market. Since Dr. Elder wrote the book in the â€˜90s there have been vast improvements in the fields of cognitive sciences and traders have adopted different â€œfinancial therapyâ€ methods to improve behaviors in the market, such as behavioral therapy or neuro-linguistic programming (NLP), or more direct, faster approaches like brain hacking with nootropics. There is no one-size-fits-all solution to greed and fear. One thing cognitive scientists and traditional economists can all agree on is that individual behavior is highly complicated and dynamic.

7. CONCLUSION

Although the concept of greed and fear is heavily discussed in the financial markets, there have been few measures taken to attempt to regulate them on the individual or policy-making levels, especially in the case of greed. Fear in itself is an unavoidable paradox that can be negative but also highly beneficial. In the financial markets, the result of fear is usually evident. However, greed is a bit more subtle and it is often encouraged and celebrated to the point that investors have created a â€œcultureâ€ where software, policy and rule manipulations are used to extend their greed. Cognitive scientists view greed as a form of addiction like drugs or alcohol that needs to be treated, but in the financial markets we call it capitalism!

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Student's Performance Prediction using Deep Learning and Data Mining Methods

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Abstract: Conceptual - Educational associations are exceptional and play most extreme huge job for the improvement of any country. As Instruction changes the lives of people, families, networks, social orders, nations and at last the world! This is the reason we live agreeable lives today. Presently a day's training is not constrained to just the study hall educating however it goes past that like Online Education System, Web-based Education System, Classes, Workshops, MOOC course. turns into It's more testing to Predict understudy's presentation in view of the colossal greater part of data put away in the conditions of Educational databases, Learning Management databases. Students' execution can be assessed with the assistance of different accessible techniques. Data Mining is the most common procedures to assess understudies' presentation and is widely utilized in Educational part known as Educational data mining. It is developing territory of study that accentuations on different strategies of data mining like order, forecast, include determination. It is utilized on learning records or data identified with instruction to foresee the understudies' presentation and learning conduct by separating the shrouded information. EDM is a technique or like a system which is utilized to mine significant data and examples or structures from a monstrous educational database.

Therefore, the understudy's exhibition is anticipated from the acquired valuable data and examples. The prime witticism of our study is to find the exhibition of understudies utilizing a few grouping methods and finding the best one which yields ideal outcomes. Educational Dataset is gathered from a University database. The dataset is pre-handled to channel copy records; missing fields are recognized and loaded up with the predetermined data. Deep Learning strategies like Deep Neural Net and Data Mining methods like Random Forest, SVM, Decision Tree and Naïve Bayes are utilized on the data set utilizing Weka and Rapid Miner apparatuses. Results accomplished are assessed on not many measurements. Deep Neural Network and Decision Tree outstands in anticipating understudies' presentation contrasted with different procedures by creating deep expectations and acquires the best outcomes like high precision, kappa-measurement, Sensitivity and Specificity are too decided.

Keywords: Educational Data Mining (EDM), Deep Learning, Random Forest, Decision Tree, Naïve Bayes and SVM.

1. INTRODUCTION

Discovering Knowledge from colossal Databases is known as Data mining. It discovers concealed data from diverse data sources relating to diverse fields. Several procedures can be utilized in various fields of data mining along with climate determining, oil explore, business, clinical, advertising and EDM and so forth. [2].To separate and dissect the information present in instructive datasources, a subdomain of data mining has likewise been developed named as Educational data mining (EDM). Data mining, measurements and AI are applied on EDM data to derive information from instructive environments. Currently, it is in demand and increasing more consideration as a result of increment in the instructive data of e-learning frameworks, and even advancing customary training. Frightened with evolving strategies for discovering the distinctive kinds of data present in educational environments, it tries to extricate important data so as to advance and value taking in processes from vast measures of crude data [6]. Testing conventional records of database can offer response to Problems, for example, "discover the understudies who bombed the assessments", while EDM offers answers to extra issues like "foreseeing the understudies who are bound to pass". Coming to instructive establishments, advancing the understudy models with the goal that understudy attributes or exhibitions can be anticipated well in advance is particular key regions of EDM applications. Consequently, numerous specialists began investigating various data mining methods so as to help educationalists or educators to evaluate and advance their respective course association [7]. Understudy execution expectation is going most exceedingly awful in our current instructive frameworks. In the event that the exhibitions of understudies are anticipated well in advance, at that point it can upkeep or improve the nature of training by foreseeing understudy' subject interests, understudy level activities, and helps with improving their exhibitions in school's universities and instructive organizations. Characterizing dropout focuses should likewise be possible by this [4]. By methods for AI procedures alongside EDM, consistent evaluation framework is rehearsed by several organizations today. These plans are useful in improving the understudy's exhibition. Profiting the ordinary understudies is

the prime saying of persistent evaluation frameworks. Pre-processing pipelines and data transformations is the result of the exertion in key spreading out of AI calculations. They contribute in data portrayal to provide for active AI, and centre the disadvantages of current learning calculations [1]. Survey discoveries on some Deep learning applications that can be applied in various fields like Image Processing, Natural Language Processing, and Object detection were found [8]. So as to foresee understudies' presentation, information discovery is recommended here to mine standards from the dataset of Systems of Learning Managements. Profound learning and data mining procedures are utilized here. Profound Learning classifier-MLP and different classifiers like KNN, Naïve Bayes are utilized in our exploration work. A model is developed by applying the classifiers on our data. Parameters like Accuracy, Specificity, Sensitivity, Kappa-measurement and ROC curve are considered for evaluating the Classifiers. Next section manages brief review donein section II and the proposed procedures and approaches are clarified in the section III. In Section IV, point by point Experimental outcomes are appeared with legitimate conversation and followed by Conclusion and expected work later on is introduced in Section-V.

2. LITERATURE REVIEW

Instructive information mining in short EDM is broad these days because of increment in e-assets, utilization of online apparatuses for training and Internet. Heaps of research is occurring to make best of instruction apparatuses and innovations [3]. The utilization of EDM methods to foresee or examine the understudies' exhibition and improve the understudies who are falling beneath acceptable evaluations, an Artificial neural system classifier model was fabricated which can be advantageous for the two understudies and educators to find information from tremendous information present in instructive area [12]. Conclusion investigation was carried on to comprehend the distinctive method of understudies learning and their arrangement of study so as to improve educating [14]. Understudy's conduct highlights were considered with different highlights and a model was proposed dependent on information mining procedures which yielded 22.1% high exactness in the wake of expelling social features. Further, by utilizing outfit strategies there was discovered 25.8%increase in precision [5]. Scholastic informational collection comprising of 473 occurrences, and found that 70% precision was yielded by Bayesian classifier. The naive Bayes classifier, ANN and KNN were utilized to sort understudy's dropouts. 87% and 79.7% exactness were yielded by K-closest neighbors and choice trees applying 10-fold cross-validation [10]. SVM's isolates the classes in high-measurement space by developing hyper plane [15]. Information mining strategies like Logistic regression and Multi-classifiers created extraordinary outcomes on information identified with wellbeing [16]. Ideal methodologies are utilized by the Decision Trees so as to distinguish or to arrive at a distinct objective in the commonsense world [13]. Consolidating this idea and accelerating the hour of preparing [9] clarifies they're across the board use in EDM. Decision Tree was utilized to anticipate classes pass or bomb on a dataset of 15150 occasions, 85.92% exactness was achieved [11]. By breaking down the above examinations, we propose proficient methods to anticipate understudies' exhibition. Deep Neural Network Classifiers in particular MLP is utilized for Deep Learning approach, and Classifiers of Data mining to be specific Support Vector Machine, Naïve-Bayes, Multi-class Classifiers, Random Forests and Decision tree. Afterward, the proposed classifiers were provided with informational collection to experience preparing and a Model was acquired. The acquired Model was provided with test information. The dataset was gathered from Learning Management System from aUniversity database. In this Paper, Best classifiers of information mining and deep learning are thought about. Afterward, evaluated onbarely any elements like Accuracy of the model constructed, Kappa-statistics, TP, TN and ROC curve.

DATASET AND DATA PREPROCESSING

Wellspring of data for building the proposed procedures to visualize the exhibition of understudies is gathered from learning the executive's framework. The dataset comprises of 1100 understudy records. It has 11 unique features.

TABLE 1: Students Dataset

Name	Type of Data	Range/Values
ID	Nominal	4
Raisedhands	Numeric	0-100
VisitedResources	Numeric	0-100
AnnouncementsView	Numeric	0-100
Discussion	Numeric	0-100
ParentAnsweringSurvey	Nominal	2
ParentschoolSatisfaction	Nominal	2
StudentAbsenceDays	Nominal	2
Internal assessment	Nominal	0-60
External assessment	Nominal	0-40
Total Marks	Nominal	0-100

The dataset has three classes dependent on their numerical interim qualities.

TABLE 2: Classes based on internal Values

Classes	
Internal-values	Class Label
0-69	Low
70-84	Medium
85-100	High

WEKA instrument is utilized in our exploration work. It is a standard Machine Learning apparatus, offers data preprocessing, cleaning and removing anomalies, classification, regression, clustering, market-basket analysis and feature selection

3. SUGGESTED METHODOLOGIES AND APPROACHES

A. Outline about the Proposed Methodology to anticipate performance of the students

Data mining and Deep learning classifiers are given to the data set gathered from educational situations. Data is preprocessed and check for missing values. Classifiers are applied on the data set to construct the models. Models are tried with test data to anticipate the understudies' performance and the best models yielding high accuracy are thought of.

The Methodology Proposed in this research work has the important phases depicted underneath.

1. Firstly, MLP-a Deep Neural network classifier and classifiers of data mining namely Bayes Net, SVM, Random Forest, Decision tree and Multi-class Classifiers. Training was performed on Educational dataset and a Model was obtained.
2. The Obtained Model from the main phase is provided with test data set and the outcomes are obtained. 10-overlay cross validation is done here in the second phase which includes both training and testing in 10-folds.
3. The obtained results are assessed on parameters like Accuracy, Specificity, Sensitivity, Kappa-statistic, and ROC curve and the best model yielding high outcomes is chosen in the third phase.

The Framework for foreseeing understudy's performance is summarized beneath.

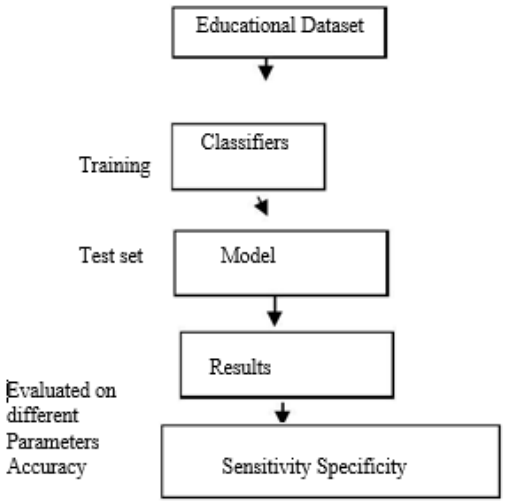

Fig. 1. Proposed Frame Work

B. Brief conversation on various classification methods utilized:

Dataset was gathered from an educational foundation ofUniversity. Experimentations were finished utilizing open source device named as WEKA. WEKA can capably work with constrained data and utilized in data mining, Data is pre-processed by utilizing separating strategies and Classification is finished. The outcomes were deeply analyzed on various parameters like Accuracy, Kappa-statistic Specificity, Sensitivity, and ROC curve area.

Weka is broadly utilized software to perform classification and relapse tasks [18].

C. Description of Techniques:

MLP: MLP, sort of neural network adheres to the standard way to train multilayer perceptron's and uses back propagation algorithm [18].

SVM: Classification and relapse analysis is watched utilizing SVM. It develops optimal hyperplane on the training data, further classifies new instances based on this hyperplane. SMO classifier is utilized [20].

Naïve-Bayes: A Classifier, grounded on the idea of probabilities, estimates classes by thinking about numeric Accuracy values, Group of Features classified by this classifier is free of each other [18].

Multi-class Classifier: It handles datasets including Multi-classes by joining 2-class classifiers [18].

Lazy-Star: It is an instance-based classifier [18].

Random Forest: Randomly trees are developed leading to a forest [19].

Decision Trees: Constructed, starting from the root and proceeds until it reaches to its leaf hubs. J48 algorithm is utilized to actualize. [17].

The information revelation is done in this research paper to foresee understudy's performance by applying Deep learning and Data mining methods. The obtained outcomes are assessed utilizing scarcely any parameters like Accuracy; Classifiers accuracy is calculated by observing the accurately classified instances to the total test data Kappa-statistic, Specificity and ROC Curve are being calculated from the Confusion Matrix utilizing Weka tool.

4. EXPERIMENTAL RESULTS AND DISCUSSIONS

Various classifiers were picked in this exploration work and near investigation of their presentation was finished utilizing WEKA tool. Instructive Dataset was pre-processed and later took care of Neural Network-MLP, SVM, K-NN classifiers, Decision Tree, Naïve-Bayes, Random Forest and Multi-class Classifier. Training and testing were acted in ten distinct folds bringing about exact Model. The acquired outcomes from the

model assembled were estimated in various terms like Accuracy, Kappa-measurement and ROC bend zone.

Final products of Classifiers utilized

TABLE 3: Comparison of Classifiers

Methods	Accuracy	TP	FP	KappaStatistic	ROC
MLP	99.45	1.00	0.00	0.99	1.00
Multi-Class Classifier	99.81	1.00	0.00	0.99	1.00
SVM	93.90	1.00	0.10	0.89	0.94
Naïve-Bayes	97.45	0.98	0.00	0.95	0.99
IBK	79.81	0.91	0.16	0.63	0.87
Lazy LWL	86.72	1.00	0.00	0.75	1.00
Random Forest	100	1.00	0.00	1	1.00
Decision Tree	100	1.00	0.00	1	1.00

It is tested that MLP-Deep Learning technique, Data mining technique-Random Forest, performed well in predicting understudy's presentation. Techniques that gave ideal outcomes are MLP, Decision trees and Random Forest with most extreme correctness of99.45%, 99.81% and 100%.

5. CONCLUSION AND FUTURE WORK

Execution of understudy's utilizing EDM is done in this exploration work. Arrangement is done so as to foresee understudies in various class classifications like High, medium and low. Classifiers utilized are Support Vector Machine (SVM), Multiple-Layer Perceptron approach (MLP), choice tree and Other Multi-classifiers for ordering understudies whether they have a place with either High, medium or low classes. The consequences of the two Data mining methods and profound learning were analyzed based on exactness and accuracy. It was found and recognized that grouping actualized by MLP Multi-class Classifier, Decision trees and Random backwoods method in this paper is increasingly proficient contrast with different classifiers as found in the exactness and accuracy. In light of the outcomes, MLP procedure is increasingly effective contrasted with other method in expectation of understudies' presentation. Rules can be mined and precision should be improved in SVM, K-NN as a component of things to come work.

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Significance of Entrepreneurship Education in School Curriculum: A Study

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Abstract: Education in the area of entrepreneurship may help people to develop skills and knowledge, which could benefit them for starting, organizing and managing their own enterprises. It has been realized that the educational institutions do not offer any assurance to get access to employment in the formal job market. Entrepreneurship education is really important as it encourages innovation, fosters job creation and improves global competitiveness. Education, training and work experience are considered as the most common indicators of human capital, associated with the success of entrepreneurs. The present paper aims at analyzing the role of current education system in enhancing the entrepreneurship in India. The major goals of education as per the present system of education with respect to the entrepreneurship are education for increasing productivity, introducing S.U.P.W. as an integral part of general education, vocationalising education to meet the needs of the industry, improving scientific and technological research and education in universities.

Keywords: Education, Entrepreneurship, Innovation, Productivity.

1. INTRODUCTION

A brief overview of the significant recommendations of the Commissions and Committees with reference to elementary education in post independent India, particularly the Education Commission, 1964-66 (Kothari Commission). Some of the major goals for education are to increase productivity, make science a basic component of education and culture, introducing S.U.P.W. as an integral part of general education, vocationalising education to meet the needs of the industry of agriculture, improving scientific and technological research and education in universities, education for accelerating process of modernization, adopting new methods of teaching, development of attitudes, values and essential skills like Self study, educating people of all strata of society, educating for promoting social and national integration, introducing common school system of public education, developing all modern Indian languages, taking steps to enrich Hindi as quickly as possible, encouraging and enabling students to participate in community living, education for inculcation of national values, introducing moral, social and spiritual values, providing syllabus giving information about religions of the world, encouraging students to meet in groups for silent meditation, presenting before students high ideas of social justice and social service.

2. OBJECTIVES OF THE STUDY

- To discuss in brief the main recommendations given in Indian Education System.
- To analyze the importance of entrepreneurship education in School Curriculum..

3. METHODOLOGY ADOPTED

The study is explorative cum descriptive in nature. It is an empirical study based upon secondary data. The project is basically developed from secondary basis of information.

4. MAIN RECOMMENDATIONS

- Free and Compulsory Education

Strenuous efforts should be made for the early fulfillment of the Directive Principle under Article 45 of the Constitution seeking to provide free and compulsory education for all children up to the age of 14. Suitable programs should be developed to reduce the prevailing wastage and stagnation in schools and to ensure that every child who is enrolled in school successfully completes the prescribed course.

- The Scientific or Experimental Method

This method consists of observation, recording, classification, hypothesis, verification and prediction. Observation means "looking at" things. It is of two kinds:

(a) Spontaneous and

(b) Controlled.

The former is conducted when the phenomenon in question is spontaneously happening as star gazing by astronomer or a sociologist is witnessing a riot. Controlled observation is also called experimentation takes place when the phenomenon can be observed in the circumstances devised by the observer himself. Experimentation is possible only in natural sciences like Physics and Chemistry. Is social behaviour really capable of being treated scientifically? This method has been used successfully over a very wide range of situation and types of behaviour.However, every possible precaution need be taken

to conceal from the subjects that observation is in progress and that measurements are being made.

The second stage in the scientific method is recording of all the data obtained in the observation. Recording must be accurate and objective.

The third stage in the scientific method is the classification. Once the facts are observed and recorded.Next comes the stage of proving hypothesis which means giving some sort of possible explanation for the correlation between the acts classified But it is not necessary that our hypothesis should be correct. If it is found to be incorrect it has to be discarded and a new one is to be formulated. This process goes on till its truth is verified.The physical science can make true prediction but Sociology can give only rough prediction as its subject-matter is so varied and complex. Sociology thus cannot make direct use of Experimental Method as the human behaviour is too complex and difficult to be brought under controlled condition for observation, comparison and experimentation. As George Cornewall Lewis remarked, "We cannot take a portion of the community in our hands as the king of Bioldigang took Gulliver, tried it in different aspect and place it in different positions in order to solve social problem and satisfy our speculative curiosity".

As a matter of fact, the study of sociology is limited largely to descriptive analysis. It provides logical description and explanation of important social institutions. These analyses may contain some elements of scientism but they do not provide scientifically verifiable evidence and theories.

- The Historical Method

The Historical Method consists of a study of events, processes and institutions of past civilizations for the purpose of finding the origins or antecedents of contemporary social life and thus of understanding its nature and working. Meanwhile, almost any discussion of political science or economics must discuss historical trends and how the distribution of resources has changed over time. History is the study of the events that have shaped the political and economic systems we have today and much more. With examples of just these three disciplines, you can start to see how one ties into the others.The historical facts, as contained in life histories, diaries, etc., may be revealing but they have little use for scientific investigation, they may not be able to answer all the questions that may be raised, by a sociologist. But this method cannot help us in studying all the problems of Sociology. The scope of Sociology cannot be limited to the study of facts provided by History.The Historical Method, therefore, was being not wholly adequate and dependable for the study of social phenomenon, calls for the employment of other methods for enquiry into field of sociology.

This method has been used by many sociologists to find out what elements in social life are functionally co-related. Taylor used this method in the study of the institutions connected with the family among primitive people and was able to show that the practice of mother-in-law avoidance was co-related with the custom of matrilocal residence.He showed that in all those families where the husband goes to live with his wife's people, the practice of the mother-in-law avoiding her son-in-law is found. Similarly, Weber also finds direct relation between the practical ethics of a community and character of its economic system.

The institution of marriage, for instance, has different meanings for the people of India and for westerners. We consider it as an indissoluble sacred bond of union between husband and wife whereas the western people take it as a union of loose type breakable at the will of either party

- Inverse Deductive Method

Sociology makes use of Inverse Deductive Method on a large scale. This method was advocated by J. S. Mill and involves the following procedure. In the first place, it assumes that there is relation between different elements of social life. By the use of Taylor's method of tracing adhesions, we inquire what elements in social life are functionally correlated. As we have mentioned above, Taylor had applied this method to the comparative and statistical study of the institutions connected with the family among the peoples and showed that the practice of mother-in-law avoidance is co-related with the custom of matrilocal residence.Similarly, it has been suggested that there is some relationship between industrialisation and capitalism, between urbanisation and disintegration of the family, between war and class differentiations and so on. The rise of nobility and the extensive development of serfdom appear to be correlated with the growth of the economic system.Secondly, after finding the correlation between the institutions, we come to the study of sequences i.e., finding whether there are any regularities in the changes of the institutions, and whether the changes in any one institution are correlated with changes in other institutions.

- Pedagogical principle

The communication between teachers and students is pedagogy. There are 10 principles. The students should be educated in such a way that they understand. Teachers should be positive and encouraging. Integration horizontally and vertically is important. The curriculum should be improved by the experienced and indigenous staffs. The health and mentality are primary factors for education. Promote effective learning Formulation of syllabus in such a way that the learning is effective. Safety and multi cultural awareness. Students should have their part in enhancing the curriculum. Multidisciplinary collaboration.Today, Higher education in India can be categorized in 3 broad Categories: University, College and Stand-Alone Institutions. There are 799 Universities, Total colleges - 39071 and Stand Alone Institutions - 11923, Privately managed Universities are 277, Central University, State University, Deemed to be University, Unitary and Affiliating University , Institutes of National Importance, Research Institutes, Inter-university Centers,

Under Graduate and Post Graduate Colleges, Public and Private Universities and colleges, General Institutions of Higher Education, Minority Institutions, Conventional Universities, Open Universities, Institutions meant for certain groups such as women.

Public universities are supported by the Government of India and the state governments, while private universities are mostly supported by various bodies and societies.The types of universities controlled by the UGC, which draws its power from the University Grants Commission Act, 1956, include Central universities, State universities, Deemed universities and Private universities.In addition to these universities, other institutions are granted the permission to autonomously award degrees, and while not called "university" by name, act as such. They usually fall under the administrative control of the Department of Higher Education. In official documents they are called "autonomous bodies", "university-level institutions", or even simply "other central institutions", In addition, there are Professional Councils are established for controlling different aspects of accreditation and coordination. All India Council for Technical Education (AICTE) , National Assessment and Accreditation Council (NAAC), National Board of Accreditation (NBA) , National Council of Teacher Education (NCTE), State level Governance, Institutional Level Governance, The Kothari Commission, emphasized that the proper sphere of Institution autonomy is in three fields; (1) Selection of students, (2) Appointment and promotion of teachers, (3) Determination of courses of study, Methods of teaching and selection of areas and problems of research

Autonomy of institutions broadly emphasizes (a) freedom to function to achieve academic excellence, freedom to administer the institution through its own rules and regulations, academic autonomy is the freedom to decide academic issues like curriculum, instructional material, pedagogy, techniques of students' evaluation, Administrative autonomy is the freedom to institution to manage its own affairs with regard to administration. Financial autonomy is the freedom to the institution to utilize the financial resources at its disposal in a prudent way keeping in view its priorities. Major issues fall under two categories – restrictions and limitations as per the regulations (University Acts and Regulatory/Guidelines from UGC) and operational decision making .They affect both government funded and private universities, though in different ways and to different degrees. In government funded universities, major issues include government's influence on vital aspects like appointment of Vice Chancellor. Functioning of the governing bodies like Senate, Syndicate, and Academic Council etc. Government control on opening of new colleges or grant of affiliation to new colleges. Wide powers are vested in the Chancellor, which position is vested with Governor in State Universities. In the case of private universities, most of the issues are with regard to setting up the university, scope for expansion (geographical as well as mode of academic delivery) and sources of funding.As per the current UGC guidelines, a private university can be set up only through a State Private University Act and has to be unitary in nature, thereby limiting the scope for expansion. A study of the Private Universities Acts of various states reveals the difference in governing mechanisms as well as operational guidelines, including admission of students. Besides, restriction on jurisdiction of the state, there are regulatory restrictions with regard to mode of delivery, like distance education. Restrictions on type of sponsoring institutions constraints the sources of funding. Need for compliance to guidelines of multiple regulatory bodies (Central and State government) affects governance.The notion of accountability is difficult to define in precise terms. However, accountability exists when there is a relationship where Institutions and their functions are subject to another's oversight, direction or request that they provide information or justification for their actions .Accountability involves two distinct stages: answerability and enforcement. Answerability refers to the obligation of the government, its agencies and public officials to provide information about their decisions and actions to justify.Enforcement suggests that the institutions responsible for accountability can sanction the offending party or remedy the contravening behavior. As such, different institutions of accountability might not be responsible for either or both of these stages .Currently, public nor private Higher Education Institutions in India are required to develop strategy plans, although a few individual institutions do so voluntarily. All public and private Higher Education Institutions are regularly expected to update performance, though most of them do not comply. Most allocations to public Higher Education Institutions are for recurrent expenditure, which constitute about 90% of the funds. These funds are subject to external auditing. There are currently no mechanisms to allocate money on the basis of performance, for either public or private institutions.

5. IMPORTANCE OF ENTREPRENEURSHIP IN SCHOOL CURRICULUM

Entrepreneurship education aids students from all socioeconomic backgrounds to think outside the box and nurture unconventional talents and skills. It creates opportunities, ensures social justice, instills confidence and stimulates the economy.

While the society all around is developing with technology and innovations, the K-12 schools have been in a stagnant scenario. Education is the driving force behind every country's economy, directly or indirectly. Sure, many schools have adapted to modernization, and have started making students work in groups to solve problems, learn online and integrate science with arts. But it is noticed even then; students that are graduating lack the advanced skills and innovative thinking to work through the modern day challenges in the workplace. Thus, entrepreneurship, the capacity to not only starts companies, but also to think creatively and ambitiously, is very important to be included in school curriculum.

Entrepreneurship education aids students from all socioeconomic backgrounds to think outside the box and

nurture unconventional talents and skills. It creates opportunities, ensures social justice, instills confidence and stimulates the economy. Entrepreneurship education is a lifelong learning process, starting as early as elementary school and progressing through all levels of education, including adult education.

Introducing young kids to entrepreneurship develops their initiative and helps them to be more creative and self-confident in whatever they undertake and to act in a socially responsible way. There are many ways entrepreneurship lessons can be integrated in the school curriculum.

Learning a Business

Students can practice writing, interview questions and conduct interviews with entrepreneurs. The information can then be compiled into a directory of the types of goods and services, locations, and hours of the businesses. Students can then discuss the location, advertisement and the products involved in the business.

Imagining

Creativity dwells within imagination. Pass around common objects to students and make them imagine that object in a different outlook, it will help students to see the same object through a different perspective. It will make students to see possibilities in a common object in a new way.

Research skills

Have students to look through the yellow pages to spot businesses and interesting names, and then categorize these results in superlative forms of adjectives, foreign words, what the business produce or sells, geographic locations and their functions.

Teaching entrepreneurship skills through school is a process, and it is highly recommended that students be left free to find their calling through it. Teachers should also be provided guidelines to manage students and help them to foster a pleasant environment for students to grow.

6. CONCLUSION

Strengthening entrepreneurship education will impact the entire entrepreneurial ecosystem as it will ensure development of skills required to generate an entrepreneurial mindset and will develop future leaders who solve more complex and integrated problems. It will also be helpful to most small and medium enterprises (SMEs) who wish their second/third generation to grow their family businesses. In India, most of the businesses are family-owned and most of these businesses do not have a succession plan. Since entrepreneurship is closely connected to innovation, education in emerging economies will also have to focus on raising the innovation capabilities of budding entrepreneurs/students in order to ensure higher success ratio. The development of any country is directly linked to its innovation potential. More developed economies tend to have higher levels of education and more diverse industry-sector profiles. Entrepreneurship education in academic curriculum is an important factor in encouraging effective youth entrepreneurship. Hence the entrepreneurial education should be there in school curriculum to strengthen the entrepreneurial ecosystem in our country.

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Incorporating Best Practices beyond Technology: Faculty Perception Related to Shift from Conventional Teaching to Online Teaching Post Covid-19

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Abstract: ***The online courses that construct a climate for a fulfilling classroom experience, provide content that translates into immediate action and application, and blends significant intransigence and a personal touch to the classroom setting. Change is abounding in this digital era of technology, as computers, personal hand-held devices and apps are used on a daily basis. This technological phenomenon has become the new normal for persons of all ages, cultures, and gender especially in the year of pandemic. Thus, the new normal technological world has fostered a prospect for educators to revisit and refurbish methods of course instruction. "The online classroom, a place on the Internet where students and teachers log in to learn together" has become a popular and unique way to reach and teach learners while fostering a learning community (Papa, 2011). The article highlights a perspective on the challenges and opportunities of using technologies to deliver leading edge online classroom education. The content in the article can be used to assist current and future educators with developing or strengthening the online classroom using technologies in addition to incorporating multiple intelligence practices for a more satisfying classroom experience.***

Keywords: Online classroom, Digital era, Pandemic, Technology, Multiple Intelligence.

1. INTRODUCTION

"We live in an era when individuals can study, or attempt to acquire a skill, when they want to at their own pace of their own selection, alone or without others" (Gardner & Davis, 2013).The new normal technological world has fostered an opportunity for educators to revisit and refurbish methods of course instruction. Some educators have chosen to shift out of their comfort zone to add on to their methods of course instruction with inventive and modern practices using technologies, content mastery, and effective communication skills to reach those being taught. Technology has proved a useful and necessary tool to help the teaching fraternity to ensure that at the local and distance teachers all over on the frontline of the emergency continue to provide essential teaching services during the COVID-19 crisis. Due to the constant increase in the number of Covid cases around the world, many important restrictions on the movement of people, the functioning of services, and rules on physical distancing have been imposed by the government. Due to this , technology have had an profound result on citizen's daily lives and ensure them access to health services, access to information and communication with competent authorities, among other things including online education maintaining social distancing. In this unexpected situation many questions are to be answered. Like what did the corona virus crisis show about the capability of the teacher's ability to adapt? Secondly what technologies play the chief roles in the change to a work-from-home world? And what technology trends can be expected from the teaching profession to see in the longer term?

2. TRANSITION FROM CONVENTIONAL TO ONLINE TEACHING: PREPAREDNESS OF FACULTIES FOR ONLINE TEACHING AND INCORPORATING BEST PRACTICES BEYOND TECHNOLOGY

Digital technologies may be seen as a access to resolve many of the problems arising from the Covid crisis: How can we continue to provide education to the many people who have to stay at home? At the same time, digital technologies may pretence challenges related to several human rights. Although many cities and regions are putting various efforts into ensuring that this academic season and education can go on as efficiently as possible, and technological solutions have emerged to make it happen. The involvement and engagement of teachers is also significant, who are reliant on the technological tools available (phone, email, Whatsapp) to retain communication with children, keep the exercises and exams going and check on their wellbeing.

COVID-19 pandemic has affected a lot of the sectors and education is not an exemption In order to teach and learn students and teachers all over the world are forced to alter their practices and turn to new technologies. Teaching still has to be delivered as COVID-19 left no choice but to adapt to new remote schooling reality for education This approach of learning has always had mixed response from teachers, faculty

and students, and now these recent events can alter the setting for online education long term. Now the whole thing of teaching and learning is moved to academic cyberspace and this is the one thing that unifies both school and college education system. In such a limited time frame translating their proficiency into a new teaching modality can be exigent. Some of the ways adopted by the teachers both at the college as well as school level for shifting from traditional to online teaching are:

1. Using video conference lectures supplemented by emailed assignments and tests can be one of the simplest form of inaccessible instruction.
2. Secondly involving a variety of forms of technology-enabled learning and teaching software.
3. Many e-learning platforms like Zoom, Google meet, MS teams, webex etc will help teachers deliver quality content and deal with the teaching process.
4. Creating interesting engaging presentations, visual and audio content. Make the learning process entertaining by organizing some virtual party or flash mob with an aim to maintain the quality of education while transitioning into online space.
5. Teachers should provide students with guidance about working remotely, outline studying plan and any possible changes, and make certain effective communication between teacher and students and within the students, focus on commitment consideration and flexibility.
6. Virtual communities and blogs can also be a great source of information as online learning resources
7. Employing both asynchronous and synchronous tools like discussion boards, Prezi or PowerPoint presentations, pre-recorded lectures, podcasts, and social media options and web-conferencing, Skype, Google Hangouts etc.
8. Some interactive activities such as online scavenger hunts, guided research, guided analysis, case studies, role-playing, and group critiques should be considered to keep learning stimulating and fun, motivating the student. (Horton, 2001; Wilson, 2001)

3. RESPONSE OF EDUCATION SECTOR IN INDIA TO COVID -19

The youth have to be prepared by higher quality education to make them most productive; hence, the system needs to be transformed in order to make the preeminent national gains from this transition. Since the start of the pandemic as social distancing is not at all a possibility in the campus, education is the foremost sector to have been paralysed. For sustained teaching and learning online policy makers, law makers, educational service providers and people at the helm of affairs have been voicing. The children and youths need to learn how to rise above this crisis, how to calm down their mind and reorganize their thoughts so that they could logically apply their mind in decision making as they are detached from the society they live in. The education system should support the emancipation of the society when the country is in the middle of a crisis. In order to reinvent new models of experiential learning and deliver influential educational experiences by building consortiums including governments, academia and enterprises to drive purposeful re skilling, this is a huge opportunity.

With the number of internet subscribers exceeding 500 million, second only to China India's digitization process is the second fastest in the world. India's culturally and geographically diverse population stands to gain a lot from mobile learning, multi-lingual support, and virtual classrooms. The repercussion of COVID-19 crisis, online education became a pedagogical shift from traditional method to the modern approach of teaching-learning from classroom to Zoom, from personal to virtual and from seminars to webinars.

There are certain common problems being faced by the education sector during Covid-19 like:

1. For providing wide-ranging and valuable teaching to a complete classroom of students at the same time technology can be of great help but implementing these virtually are not seen in many cases.
2. Teacher's attitude in using the old methods of teaching renders it very complicated to make them approving towards the new ideas.
3. The comfort of people with the conventional approach of teaching that they consider that what worked for the past generations will work for the current too. Devoid of recognizing that with altering times there is a need to even change the teaching methods.
4. Uneven geographical division and need of the appropriate infrastructure are the requirements for technological advancement. Both of these hinder the growth of educational technology.
5. The backward areas of our country are incapable to get to use the newer teaching and learning methods as a lot of public schools until today do not have functional computer labs or access to the internet.
6. In the rural areas children still prefer to study in their own language , more than half the student population in the country study in their own vernacular mediums and these interactive learning platforms provide their services in English.
7. In spite of the steps taken by the government to better this situation, a large portion of teachers in the country remain uneducated about technology and due to this the teachers are themselves unable to use the computers which make them unskilled to teach the students.

4. PERCEPTION OF FACULTY AND STUDENTS FOR ONLINE TEACHING USING VARIOUS APPS AND ONLINE TOOLS

De-schooling society (Illich, 1971) seems relevant as the current scenario tries to keep our children away from the traditional formal education system and provide an opportunity to flourish on their curiosity. As of today's scene, it is quite impossible to take classes in regular mode amid the COVID-19 outbreak in which to maintain the social distancing is of paramount importance; hence undoubtedly online teaching mode became a necessity that brought an organization and individual both in a unfreeze phase. Unfreezing step provided an opportunity for motivation and readiness among system and stakeholders (Siegal et al., 1996).

5. SOME OF THE COMMON PERCEPTIONS OF FACULTY FOR ONLINE TEACHING USING VARIOUS APPS AND ONLINE TOOLS:

1. Some faculty members are reluctant to offer online courses because of significant concerns relative to the impact of such formats on the quality of instruction, learning, and participant interaction.
2. Many instructors who are otherwise comfortable with technology in instruction cite concerns about online formats. They express concern over reduced human interaction, technology malfunctions, variable technology proficiencies of students, and increased faculty workload (Beard & Harper, 2002).
3. The prospect of hundreds of thousands of professors and students venturing into academic cyberspace for the first time has prompted some commentators to take to social media to predict that this period could alter the landscape long term for online education.
4. "Every faculty member is going to be delivering education online. Every student is going to be receiving education online.
5. Teachers and students now have a digital toolbox – ranging from engaging devices to teach the students to online courses and digital textbooks. Digital education is the term used to refer to all online educational practices.
6. Traditionally, online learning perceived as lack interactivity compared to face-to-face learning. It is mainly due to the lack of social presence, lack of social interaction, and lacks of students' satisfaction.
7. However, online learning has been promoted as being more cost effective and convenient than traditional educational environments as well as providing opportunities for more learners to continue their educations.
8. Effectiveness of learning also depends on how the content is curated to online environment and also in understanding and addressing the constraints faced by students.
9. Faculty needs more technical preparedness itself with necessary online educational resources and training programmes.

6. CONCLUSION

The virtual world has come to the rescue since the COVID -19 pandemic has disrupted the normal lifestyle of people across the world. Schools and colleges adopted a broad range of virtual learning tools and software, including virtual tutoring platforms and learning management systems. Despite all these many struggled to provide the same quality of teaching, especially during the first weeks of lockdown. Most high-end private and public institutions have made the change smoothly using online platforms such as Zoom, Google classrooms, Microsoft teams, etc .For some others, who find learning in large classes unapproachable this may be a less tense option. Many teachers are making the finest of this situation by exploring new methods of teaching and assessment. While India enjoys a wide geographic and cultural diversity, it also suffers from a huge socio-economic divide. Only a small part of the Indian population has access to online education right now. Some of the chief concerns are intermittent power supply, weak or non-existent internet connectivity, and costly to buy essential devices are chief concern.

The governments must ensure the ease of access of reliable communication tools, high quality digital educational experience, and endorse technology-enabled learning for students to bridge the disparities originated in the education system before and after COVID-19 disturbance which is also undoubtedly necessitated for constant learning. Technologies like artificial intelligence (AI) could open most recent possibilities for inventive and modified approaches catering to different learning abilities.

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Impact of COVID 19 on Digitization: Rise of Gig Economy

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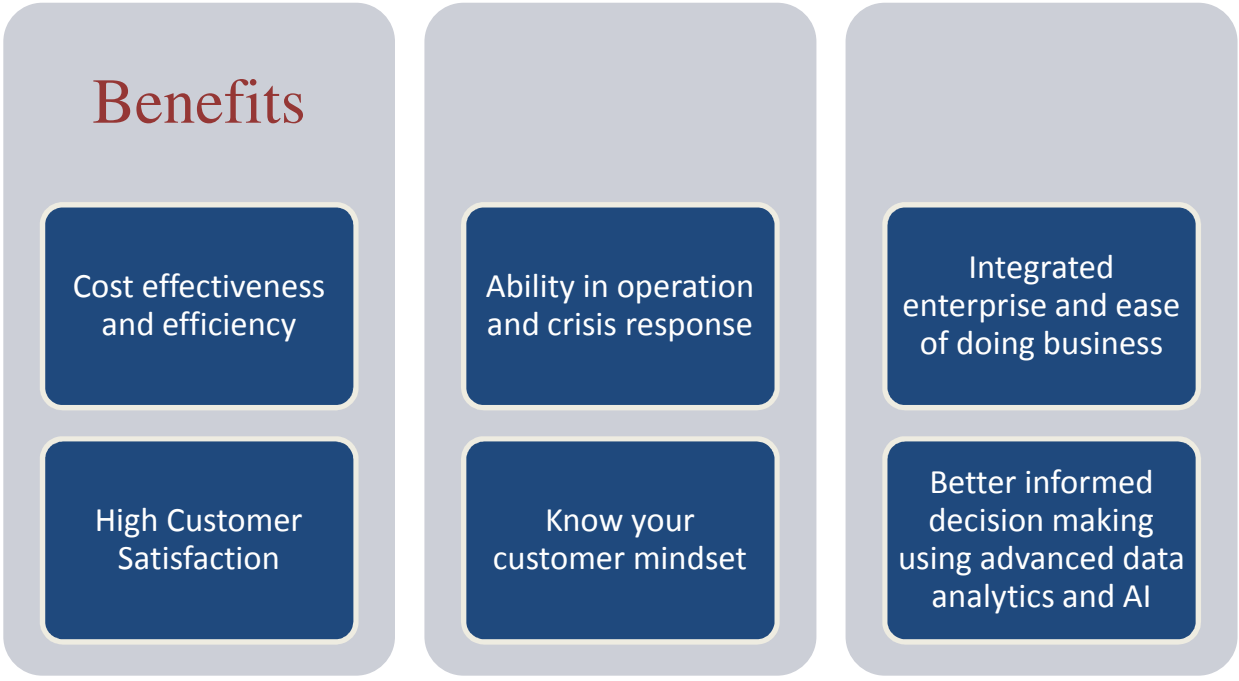
Abstract: ***Technology has become a major driver for digitization and thereby turning our economy as gig economy where several businesses and organizations are flourishing by using unique technologies in entrepreneurship. Creation of digital platforms is offering various opportunities to produce and trade in digital gig economy. Because of COVID 19 pandemic, there would be a sustainability in online business creating a gig ecosystem of trust in the economy.***

Keywords: Digitization, Gig, Impact, Platforms

1. INTRODUCTION

Digitization is a new business paradigm leveraging certain technologies to design new business models. This has turned out to be a major determinant of countries' competitiveness and considered essential for the socio-economic prosperity of the economy. Following the commercialization of the personal computer in 1980s and further the invention of World Wide Web in 1990s, Indian economy has shown deepest concerns regarding computing signifying digitization after Second World War. Then, in 2007 certain technologies have come out digitally like internet connectivity, big data, Artificial Intelligence (AI) etc. (Cavallo et al, 2019, Coyle, 2017). Digital transformation has also enabled businesses and organizations to grow by infusing their technologies into entrepreneurship. This is what known as "Digital Entrepreneurship". Big organizations benefit from adopting new plans and strategies and realize the advantages of being digital and to rethink their new financial, operating and business aspects.



Because of COVID-19 pandemic (Bloom et al., 2020; Schrage, 2020), the acceleration of the digitalization of the world economy gives a need for research on digital entrepreneurship. In the view of above, this paper provides an overview of the major research questions recognizing the importance of digitization in entrepreneurship, impact of Covid-19 on

digitized economy and thereby examining the effects in the rise of gig economy.

2. THEORETICAL FRAMEWORK

Demonstrating the concept of digital entrepreneurship is not straightforward. Shane and Venkataraman (2000) defined the field as studying "how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited". Opportunity recognition and exploitation within the digital economy are terms to be include in digital entrepreneurship. Davidson and Vaast, 2010 defined the term as the collection of opportunities based on the usage of digital media and other information and communication technologies. It mainly includes creation, innovation and commercialization of new digitized infrastructure or creating value for existing digitized platforms. (Sussan and Acs, 2017). Google, Microsoft and Facebook turned out to be considered as digital ventures. Digital artifacts basically the entrepreneurship process which imply man-made objects embodied certain technology components of hardware and software (Von Briel et al, 2018).

There are various impacts of digitization on entrepreneurship (Varian, 2010). First, it includes the allowance of new forms of contract. Secondly, this includes generation of data and analysis to influence consumer behaviour. Thirdly, impact of digital space which makes production cost effective. Fourthly, major impact would be to enable personalization and mass customization. These impacts influence digital entrepreneurs to create value for innovative business models (Brousseau and Penard, 2007). The major challenge which these entrepreneurs face is to create and make progress in establishing digital platforms and thereby maximizing network effects. This might be possible through a combination of high fixed cost and low marginal cost which result in successful digital platforms becoming more profitable.

3. MAJOR CHALLENGES OF DIGITAL ENTREPRENEURSHIP

It is essential to find digital platforms in digital entrepreneurship. The main challenge is to reorient towards maximization of indirect network effects which can be a source of success and failure. Further, establishment of a successful platform is an important indicator thereby accounting for fixed costs. If this combination of network effects and high fixed cost persist, then there would be large generation of data thereby becoming busines more profit-oriented because of which marginal costs of providing service to a customer gets low.

Creation of these digital platforms have both positive and negative consequences. On the positive side, innovation has come out to be valuable by different micro-entrepreneurs. On the negative side mainly because of COVID 19 pandemic, it is felt that these platforms may remove traditional businesses out from the market.

4. REQUIREMENT OF SUSTAINABILITY

In view of the impact of COVID 19 on digitization, efforts should be taken in order to ensure sustainability in digital entrepreneurship. Firstly, Small and Medium Enterprises should focus on promoting their products using social media. Building online communities, proactive participation and conducting marketing analysis are the ways to develop customer loyalty and experience better results thereby maintaining sustainability.

5. RISE OF GIG ECONOMY

Though technology has played a major role for new business model, entrepreneurship. Digital online platforms led to the rise of gig economy where there is a pavement of gig digital platforms. These can be labour based ones enabling workers to provide certain activities and the asset-based ones allowing people to rent or sell their unused assets. These platforms have brought a major change transforming a gig economy from C2C markets, B2C markets. Many activities have been stimulated in the digital gig economy because of Covid-19- Firstly, emergence of gig economy framework leading to matching of demand and supply. Secondly, certain policies and regulations should be followed to protect consumers, allowing fair market competition, easy access to labour laws such as healthcare, social security, pensions in contracts belonging to gig economy etc. Lastly. Taxation policies should be adhered to for ensuring fair taxation rates and payments. A secure online system should be provided by Government in enforcing certain digital platforms thereby focusing on adequate infrastructure. Ensuring high-speed internet connectivity in rural areas, decreasing reliance on cash payments also taking cybersecurity measures to generate a proper system of gig economy.

6. CONCLUSION

Gig culture is very important in maintaining a different mindset in a gig economy. In simple words, it can be said, that there should be a "gig mindset". Thus, there should be sense of freedom, openness, accountability and engagement. Thus, apart from government regulations, people themselves should look for self-direction and self-management to do work.

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Convergence to Global Accounting Standards: A Journey of Adoption in India

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Abstract: Growth of international trade, increased globalization calls for adoption of a common business language across the globe. Adoption of International Financial Reporting Standards (IFRS) is unavoidable to succeed in international markets. This paper highlights the journey of converging to IFRS in India by introducing Indian Accounting Standards (IND AS).

Keywords: IFRS, IND AS, India.

1. INTRODUCTION

Accounting aims at providing material information about companies to both internal and external users of such information. The information reported in financial statements must be fair, adequate and useful to the interest of all stakeholders. Internals users of such information are management which undertakes several decisions based on financial reports whereas creditors, government agencies, banks, financial institutions, community are few external users of accounting information. Since liberalization and globalization, the world economy is transformed into single global village. This calls for adoption of uniform practices amongst the Multi-national corporations (MNCs). Norms and standards of accounting more popularly known as GAAP (Generally Accepted Accounting Principles) provides guidelines, enhances transparency in recording and presentation of financial information for users of such information. Institute of Chartered Accountants of India (ICAI) in association with Accounting Standard Board (ASB) is working towards convergence of Indian Accounting Standards with International framework to ensure uniformity across international boundaries.

Alternate treatments of accounting results in lack of efficiency, credibility and wastage of resources in terms of reconciling such financial statements. For instance, there are country specific differences as to rules for recording of real estate value. In some countries like U.K., it is recorded at market value which is highly volatile whereas in majority of countries it is recorded at its historical cost. Such inconsistencies are also prevalent in accounting treatment of various aspects like goodwill, valuation of marketable securities, depreciation etc. In order to ensure comparability of financial performance of different listed companies adoption of standardized way of presenting information is a must. Standardized global accounting standards will enhance quality of reporting financial information and thus, better understanding amongst foreign investors.

Growth of foreign investors, free trade agreements, access to international capital markets have spurred the demand for harmonization of recording and reporting financial transactions among all countries.IFRS (International Financial Reporting Standards) issued by International Accounting Standard Board (IASB) are globally accepted and highly standardized accounting standards. Adoption of IFRS ensures uniformity, transparency and comparability of financial statements all around the world. It would replace national accounting standards. A move towards consistent model of accounting augment the sources of raising capital due to adoption of standardized procedures.

Thus, the conversion of local accounting standards into globally accepted set of accounting standards is important due to following reasons:

- **Globalisation:** Integration of world economy resulted into enhanced global interactions gave a push to international trade. Exchange of business, birth of MNCs calls for adoption of uniform and globally accepted set of accounting standards.
- **Cost saving:** Adopting of uniform accounting practices avoids unwanted wastage of efforts and money in terms of reconciliation of financial statements.
- **Comparability:** Presence of dual accounting standards namely domestic and international leads due to incomparable financial statements. A single set of accounting practices gives more confidence and understanding to all users of financial statements across the globe.
- **Sources of capital:** IFRS is preferred by global lenders and foreign investors. Adoption of international accounting standards opens up access to foreign capital markets and new sources of raising funds.
- **Cross border Acquisitions:** Harmony in recording financial transactions ease the cross- border takeovers and acquisitions.

- **Proactive Approach:** Adoption of IFRS is a reality and thus unavoidable. Thus, countries must plan for phased integration of national accounting standards with international framework to ensure survival.
- **Investor Confidence:** Usage of common and globally recognized accounting standards enhance confidence of investors. As financial reports are comparable and understandable.

2. LITERATURE REVIEW

Lantto and Sahlström (2009) studied the impact of adoption of IFRS on financial reporting of Finland companies. Study found significant impact of IFRS on financial ratios of companies is mainly due to fair valuation of assets rule under international norms.

Stent et al. (2010) examined the effects of adoption of IFRS on financial ratios of companies in New Zealand. A sample of 56 listed companies were taken out which 16 companies proactively adopted IFRS and 40 were laggards who reacted to mandatory requirement. The result pointed that IFRS impacted majority (87%) of the companies in New Zealand. Liabilities and equity are most effected element of financial statements.

Terzi et al. (2013) studied the impact of IFRS on financial reporting of 140 listed companies in manufacturing industry of Turkey. The study investigated differences in financial statements prepared as per local accounting standards and IFRS with the help of several financial ratios. Significant differences were found in ratios of local and IFRS based financial statements. Shareholders' equity, non-current liabilities were significantly impacted by adoption of IFRS.

Ismail R. (2017) stated in study that convergence to IFRS is a challenging task. It needs cooperation and support from every corner for effective adoption to international standards in the economy.

Parvathy P. R. (2017)analysed the state of adoption of IFRS in India. The study pointed out that progress is slow and country like India has long way to go for achieving a common global language of accounting.

Sardar et al., (2018)studied the impact of Indian Accounting standards (Ind-AS) on various listed companies and industries/ sector of economy. The impact was analysed by indepth study of financial statements and performance post implementation of Ind-As. The study revealed that magnitude of effect of Ind-AS is significant more on manufacturing sector vis a vis service sector. Highly volatile profit numbers are evident ascribed to changes in accounting treatment of varied variables such as fair valuation of assets. Major variables are significantly more impacted in case of sectoral impacts wherein volatility is more in case of minor variables for company specific effects. Thus, impact of Ind-AS differs across companies and industries.

3. OBJECTIVES OF THE STUDY

The major objectives of the study are:

- To briefly study the convergence to International Financial Reporting Standards (IFRS)
- To examine the current applicability of Indian Accounting Standards (IND AS) in India.

4. EVOLUTION OF IFRS

International Financial Reporting Standards are globally accepted accounting standards. The basic objective of IFRS is to provide a common accounting language which can be used globally so that financial statements are understandable across national boundaries. Convergence to IFRS is beneficial for those companies which are multi-national. Such companies being engaged in international trade requires a common business language to ensure uniformity and stability of reported financial information. Investors also prefer those companies where financial statements are understandable and comparable from company to company and also country to country.

Non-compliance of IFRS by a country is being seen as risky (Vinayagamoorthy and Sankar, 2012). Many countries have adopted IFRS on mandatory basis particularly for publicly accountable companies i.e. listed companies. International Accounting Standard Board (IASB) based in London issues international accounting standards. IASB came into existence on April 1, 2001 which replaced International Accounting Standard Committee (IASC). There is proper process of issuing an IFRS whereby exposure draft is approved by members of IASB in majority.In 2005, members of European Union formally adopted IFRS. The aim of IASB is to formulate new accounting standards known as International Financial Reporting Standards (IFRS) which ensures uniformity in business language across the world. Such move will make financial statements more comparable, transparent and reduce the unnecessary wastage of cost in terms of reconciliation. Reconciliation is required when domestic GAAPs (Generally Accepted Accounting Standards) are used in place of globally accepted accounting norms.

Domestic accounting practices based on general acceptance provides room for alternate treatments and thus manipulation of accounts. Window dressing of figures can be done to serve the personal interest at the cost of general public funds.

IFRS across the globe

As of 2018, 166 countries have converged to IFRS out of which all European countries have adopted it (Borhade, 2018). Recent reports of IFRS covered 166 jurisdiction which accounts for 98% of the world's GDP. Nearly all the jurisdictions except 10 are committed to adoption of global standards.**Table 1** describes the adoption of IFRS standards among 166 jurisdictions.

TABLE 1

	Number of jurisdictions				
Region	**Jurisdiction in Region (1)**	**IFRS standards are required for all publicly accountable enterprise (2)**	**Percentage of adoption of IFRS in a region**	**IFRS standards are required for at least some of publicly accountable enterprise**	**IFRS standards not required for any publicly accountable enterprise**
Europe	44	43	98%	1	0
Africa	38	36	95%	1	1
Middle East	13	13	100%	0	0
Asia-Oceania	34	25	74%	3	6
Americas	37	27	73%	8	2
Totals	166	144	87%	13	9
As % of 166	100%	87%		8%	5%

Source: www.ifrs.org

IFRS in India

Institute of Chartered Accountants of India (ICAI) came into existence in July, 1949 by passing Chartered Accountant Act, 1949. It was passed by Parliament of India and is amongst the top three professional bodies of accountancy in the world. ICAI further set up Accounting Standard Board in 1977 for minimizing diverse accounting practices. ASB issues accounting standards in India in consultation with ICAI.

International orientation of Indian companies by doing cross boundaries trading and interactions has lead to convergence of I-GAAPs to IFRS. Accounting standards in India are revised in a phased manner to consolidate with international norms. Since April 1, 2011 observation of IFRS have been mandated for companies along with financial institutions. Though, Indian government through Ministry of Corporate Affairs (MCA) is working since 2007 for updating national accounting practices by setting up a task force under the supervision of ICAI.Experienced professionals can help bridge the gap to converge with IFRS (Ashok, K.K., 2014). With a view to converge with IFRS, MCA in 2015 has introduced Indian Accounting Standards (Ind-AS) under Companies Rules, 2015. Ind-AS are based on IFRS. Process of introducing global accounting standards includes the following:

- **Impact assessment of IFRS:** Under this impact of adoption of IFRS on current financial statements is analyzed.
- **Planning for Implementation:** It includes amendments in existing reporting process.
- **Final Implementation:** It involves application of International Financial Reporting Standards (IFRS).

Ind- AS

Under section 210A of Companies act, 1956 National Advisory Committee on Accounting Standards(NACAS) was set up. The main objective of NACAS is to advice central government in issuance of accounting standards in India. Under Companies (Accounting Standards) Rules, 2006 28 accounting standards were notified. In April 2011, it was decided by Ministry of Corporate Affairs(MCA) to merge with IFRS.

Accounting standard board set up in 1977 by ICAI issued Indian Accounting Standard (Ind-AS) to converge with IFRS under the recommendation of MCA. The idea is to converge with international reporting system and not to simply adopt it as it is. Prior to adoption of Ind-AS IGAAP (Indian Generally Acceptable Accounting Principle) was applicable. Ind-As have been introduced under Companies (Indian Accounting Standards (IND AS)) Rules 2015. They were adopted in India in a phased manner comprising of amendments in consecutive financial years starting from April 2016. Figure 1 describes the phases of adoption of IND AS by listed companies, unlisted companies, banks, insurance companies and NBFCs. It is evident from figure below that first limit is applicable to companies

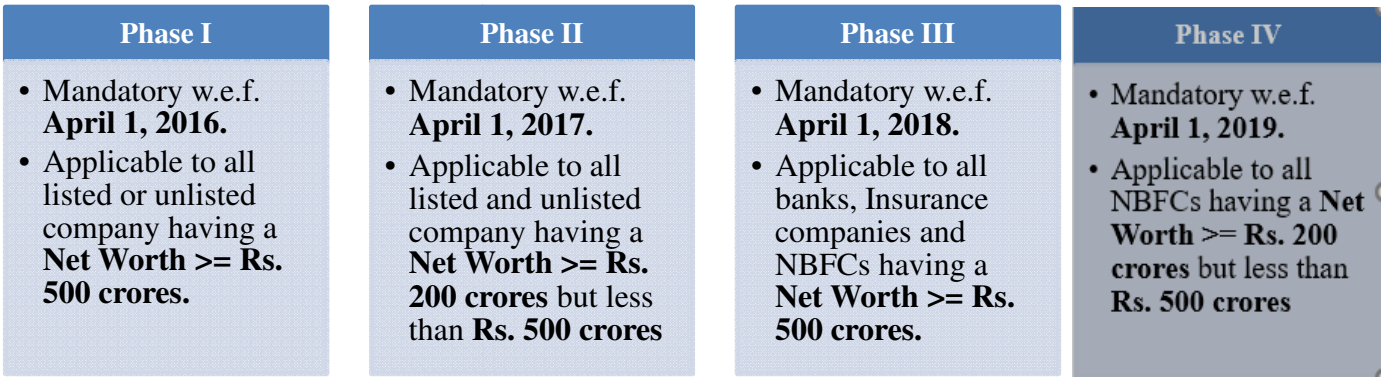

Fig. 1. Phases of Adoption of IND AS

5. CONCLUSION

It is evident that each country is becoming a common global village by reducing trade barriers and increasing cross border interactions. Multi- national trade requires a common accounting language that is understandable by all. Introduction of International Financial Reporting Standards (IFRS) by International Accounting Standard Board (IASB) is an initiative to provide a globally accepted and consistent accounting standards across the globe. Almost all the countries have decided to converge or adopt IFRS. India too decided to converge with IFRS in 2011. Ministry of Corporate Affairs (MCA) directed ICAI and issued Indian Accounting Standards (IND AS) for converging with international standards. Adoption of IND AS is done in a phased manner w.e.f. April 2016 where it was initially applicable to companies having a Net Worth >= Rs. 500 crores, then this limit is reduced to Rs.200 crores. In 2018, IND AS is even made applicable on mandatory basis to banking and financial institutions in a phased manner. Thus, India is on a right track on adoption of a common and globally accepted accounting standards that will help Indian Companies to compete in global market and access to global markets and foreign capital.

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Speech Emotion Recognition using MFCC Features

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Abstract. One of the most normal ways in which a human being may express himself is by speaking. We rely so much on it that when we have to use other means of communicating, such as emails or text messaging, we remember its meaning. It is no wonder that in text messages, emojis have become popular, and these text messages may be confused, and like we do in voice, we would like to carry on the sentiment along with the text. Since emotions help us to understand each other better, a natural outcome is to extend this understanding to computers.

Keywords: SER, MFCC, CNN.

1. INTRODUCTION

To successfully implement a Speech Emotion Recognition (SER) system, we need to model and define emotions carefully. However, there is no consensus about "How to define an emotion", and this still seems to be an open problem in psychology.

"Emotions are convoluted psychological states that are composed of several components such as personal experience, physiological, behavioral, and communicative reactions."

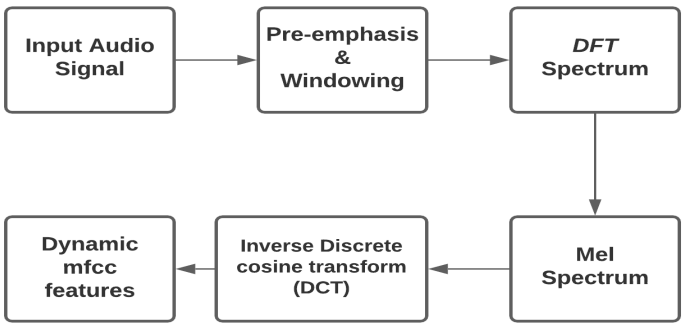

Fig. 1. MFCC Feature extraction process

The extraction of the Mel-frequency cepstral coefficients (MFCC) spectral features essentially involves windowing the signal, applying Discrete Fourier Transform, taking the magnitude log, and then warping the frequencies on a Mel scale, followed by applying the inverse Discrete Cosine Transform [1]. The MFCC features have been applied to various sound classification tasks such as Music genres Classifier or Urban Sound classification and has provided excellent results. MFCCs operate with frequency on the known variation of critical bandwidths of the human ear. These filters are spaced linearly at low frequency and logarithmically at high frequency to capture the phonetically relevant characteristics of speech and audio[3].Fig 1 represents the process to obtain MFCC features.

2. RAVDESS DATASET

For our model we are using Audio-only (16bit, 48kHz .wav) datasets for both speech and song from RAVDESS dataset. The data stored in folders have a unique naming mechanism which helps us to provide labels to our dataset. The naming convention of the audio files is as follows: 01-01-06-01-02-01-12.wav, breaking each part initial 01 is Modality (Audio only) followed by vocal channel (speech-01, songs-02). Next is the most important part: The Emotionsfollowed by Emotional Intensity (01: normal, 02: strong). Next up are statements, repetition and actor no respectively [1].

TABLE 1: Emotions in RAVDESS dataset

01	Neutral
02	Calm
03	Happy
04	Sad
05	Angry
06	Fearful
07	Disgust
08	Surprised

The 3rd feature was extracted from the file names and a dictionary of emotions was created for easy searching. The MFCC features and labels were stored in separate files. The compilation of datasets of speech and music was done manually.

3. MFCC FEATURES

MFCC features stands for Mel-frequency cepstral coefficients. The extraction of the MFCC spectral features essentially involves windowing the signal, applying Discrete Fourier Transform, taking the magnitude log, and then warping the frequencies on a Mel scale, followed by applying the inverse Discrete Cosine Transform [1]. Pre-emphasis boosts the amount of energy in the high frequency. The most common pre-emphasis filter used is given by :

$$H(z) = 1 - bz^{(-1)} \quad (1)$$

where b ranges from 0.4 to 1.0 and controls the slope of the filter.[1-2]

Windowing involves the slicing of audio waveforms into sliding frames. We cannot chop off the edges as the sudden fall in amplitude will end up creating a lot of noise. So the frames selected for windowing the waveform must be gradually dropping near the edges. If w is the window applied then the sliced frame will be w[n] times original audio clip.

$$X[n] = w[n]s[n] \quad (2)$$

Commonly used windows are the Hamming window and Hanning window.

DFT i.e. Discrete Fourier Transform is applied to extract information in frequency domain.

$$X[k] = \sum_{n=0}^{N-1} x[n] \exp\left(-j\frac{2\pi}{N}kn\right) \quad (3)$$

To compute Mel Spectrum, the Fourier transformed signal is passed through a set of band pass filters known as mel-filterbank. Mel scalemaps the measured frequency to that we perceived in the context of frequency resolution. The approximation of Mel from physical frequency can be expressed as

$$\text{Mel}\_f = 2595\log(1+f/700) \quad (4)$$

f is physical frequency with unit Hz, and Mel_f is perceived frequency. All the mappings are non-linear. Then we apply a triangular band pass filter to generate frequencies that humans can perceive by converting frequency information. The output of this mel-filterbank is a power spectrum. Next we take the log of the Mel filterbank's output. Now to convert this into cepstral domain Discrete Cosine Transform is applied.

FinallyMFCC features are calculated as:

$$y_t[n] = \sum_{m=0}^{M-1} \log(Y_t[m]) \cos\left(n(m+0.5)\frac{\pi}{M}\right) \quad (5)$$

Where n = 1, 2, 3, 4, ..., C , y[n] are cepstral coefficients and C are the no of MFCCS [5].

4. PROPOSED METHODOLOGY

Classification of emotions is a Supervised Machine Learning task. The extracted MFCC features were stored in a file, and the labels for these were stored by decoding their special name convention and then were stored in a separate file. These two files will serve as the dataset for our ML model. The ML model used here is a CNN model.

4.1 CNN Model

In the field of image detection and classification, the CNN algorithm is one of the most used techniques. It extracts the features from an image by processing the image, detecting its features and storing them in a single vector for input purposes. Since our files have extracted features from a graph itself we decided to go for this model. CNN model consists of 4 layers that extract and reduce the no of features.

4.1.1 Convolution Layer

Main focus of the Convolution Layer is to extract features of an input image. Multiple Feature detectors are used to preserve the relationship between pixels using small squares of Input data.

The output of this Layer is Feature Map that stores limited no of features of the original image. As the input for this layer an image matrix and a filter is passed.

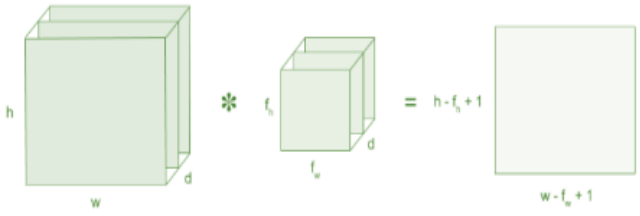

Fig. 2. Convolution Layer [6]

4.1.2 Pooling Layer

This layer further reduces the size of the feature matrix by selecting a particular feature from a submatrix of features to highlight the essential features only. Various pooling techniques are:

- Max Pooling : Selecting the max features
- Average Pooling : Select the avg of the features.
- Sum Pooling : Select sum of the features.

In our model we choose to use Max Pooling with the pool size of 4.

4.1.3 Flattening layer

This is a simple layer that converts a pooled matrix into a 1 dimensional vector that can be used as the input to our ANN layer.

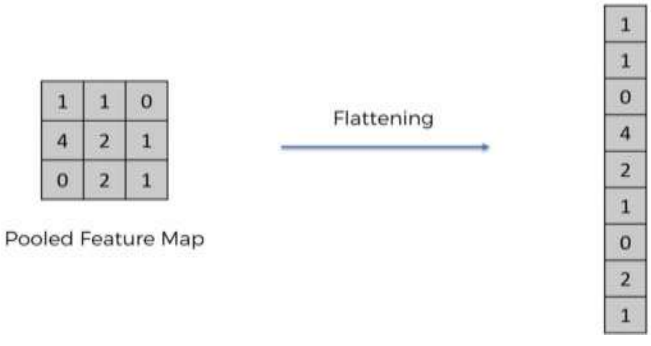

Fig. 3. Flatten layer

4.1.4 Full Connection

After converting the features into a 1D vector now we feed it to the fully connected layer like a neural network.

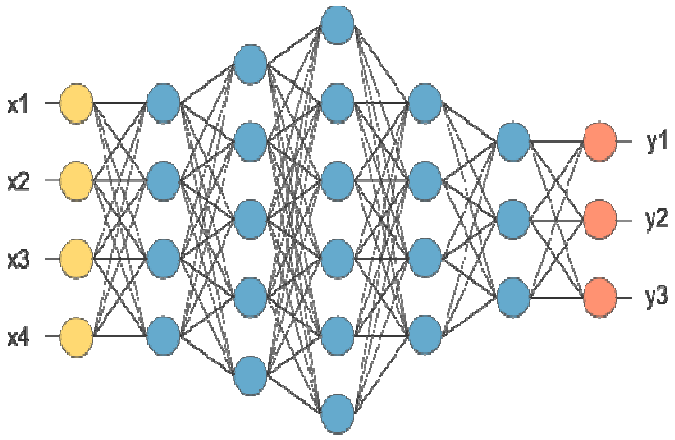

Fig. 4. Fully connected layer[6]

4.2 Hyperparameters

Before training the model we need to decide the hyperparameters and structure of the CNN Model. This is experimental i.e. done by hit and trial. In our model we tune the hyperparameters for RAVDESS dataset to obtain optimal structure and obtain maximum accuracy.

TABLE 2: Hyperparameters for CNN Model

Hyperparameter	Range/Value
Test size	15%-30%
No of epochs	0-200
Batch size	8-64
No of Convolution Layers	0-3
Activation Layers Used	Relu, softmax
Pool used	Max pool, Sum Pool
Pool size	[2x2],[4x4]
No of Dropout Layers	0-3
Dropout values	0.1-0.3
optimizer	RMSprop

5. RESULTS

The optimal values of hyperparameters provided us with an accuracy of 75%. The implementation of the proposed work was done in Python language on Spyder editor. A simple GUI was also created that intakes the audio file(.wav) and uses the saved model to classify the speech into one of the 8 emotions.

TABLE 3: Selected Hyperparameters values

Hyperparameter	Range/Value
Test size	15%
No of epochs	200
Batch size	32
No of Convolution Layers	3
Activation Layers Used	Relu, softmax
Pool used	Max pool
Pool size	[4x4]
No of Dropout Layers	3
Dropout values	0.3
optimizer	RMSprop

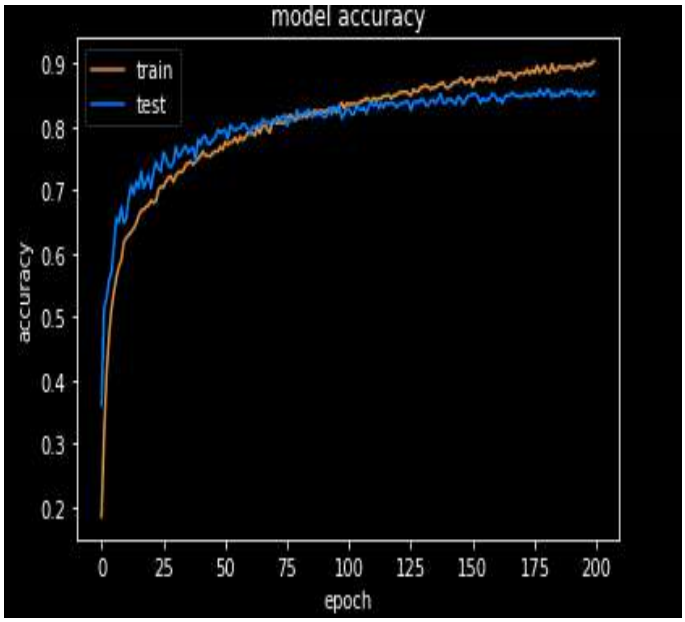

Fig. 5. Accuracy Curve

6. CONCLUSION

The paper focuses on classification of emotions through speech. MFCCfeatures were used to train a CNN model that achieved an accuracy of 85%. MFCCfeatures are not only restricted to emotion recognition but to any speech recognition model.

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Digital Entrepreneurship: An Approach for Development

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Abstract: As business and society continue to be transformed by digital technology .Digital entrepreneurship describes how entrepreneurship will change and highlights changes in entrepreneurial practice. Digital entrepreneurship includes entrepreneurship in a digital world with technique of designing and offering products, and services and generating revenue and minimizing cost , looking customers for entrepreneurial ventures, opportunities to collaborate with partners, sources of opportunity, risk and competitive advantage . A ways of thinking about entrepreneurship itself a new approach of entrepreneurship. A Digital Enterprise is a business that has completed a digitalization strategy to fully incorporate digital tools and technologies across all aspects of their operations, from ideation through realization to utilization. This entrepreneur development process helps new firms or ventures get better in achieving their goals, improve business and the nation's economy. The focus in this article remain on Digital entrepreneurship a new and developed initiative for fast track process in business operation in economy.

Keywords: Business, Digitalization, Entrepreneurship, Innovation, Technology.

1. INTRODUCTIONS

Entrepreneur (Decision Maker)

Entrepreneurship describing the business processes as good factor of production . The entrepreneurship, dating from the eighteenth century, used it as an economic term describing the process of bearing the risk of buying at certain prices and selling at uncertain prices and include the concept of bringing together the factors of production . Any unique entrepreneurial function or a form of management, the concept of innovation was added to the definition of entrepreneur-ship, early this century. This innovation could be (i)process innovation, (ii)market innovation, (iii)product innovation, (iv) factor innovation, and (v) organizational innovation. A new entrepreneurship as involving the creation of new enterprises and that the entrepreneur is the founder. Entrepreneurs are as engine of economic growth helping to build some of the largest firms in the world as well as some of the small businesses . Entrepreneurs thrive in economies where they have the freedom to start businesses and buy resources freely. The reward to entrepreneurship is profit .

Functions of Entrepreneur

1) The review of situation and availability of resources organizer initiates a business or production and planning of business is undertaken.
2) Organizer combines the land, labor and capital resources for business or production.
3) During the production process right direction and in time supervision is required for organizing, executes the business in a proper way.
4) Organizer keeping watch on changing situation. Because of changes in situation in respect of marketing, Govt. decision, etc. will hamper the business. Thus, control is also important.
5) Risk means uncertainty, risk is physical or market risk. The business cannot be always in profit and losses are required to accept. Risk taking is becomes an important function of an organizer.
6) A successful organizer is always innovative and introduce a new method or commodity in the production process or in business.

Digital Entrepreneurship

Digital entrepreneurship includes in a digital world with Ways of, (a) designing and offering products, and services, (b) generating revenue, and reducing cost, (c) finding customers for entrepreneurial ventures, (d) New opportunities to collaborate with platforms and partners, (e)New sources of opportunity, risk, and competitive advantage, (f)New ways of thinking about entrepreneurship itself that is another way of saying it offers new theories of entrepreneurship, (g)Digital entrepreneurship initiate strategy, opportunity, and risk.

2. SIGNIFICANCE

(i) In terms of education, digital entrepreneurship opens new possibilities to make expert the next generation of entrepreneurs. The best way to learn entrepreneurship is to work and react with experience. Starting a new business,

or launching a new product, in the normal world is costly and risky. The digital world offers a variety of pathways to success.

(ii) As digital technology evolves, new about digital entrepreneurship will change over time. Now, there's a real need to better prepare entrepreneurs for the digital world, and to give more people a new path to entrepreneurship .

3. DETERMINANTS OF DIGITAL ENTREPRENEURSHIP

1. Basic characteristics for starting a digital business, 2. Personal characteristics and competences, 3. Professional flexibility, 4. Decision-making and bounded rationality, 5. Entrepreneur 's interest to avail, opportunity, risk, attitude, personal motivation and outcomes, 6.social positioning, access to new entrepreneurial possibilities.

4. INNOVATION AND DIGITAL ENTREPRENEURSHIP

Digital entrepreneurship is an important instructor within the innovation system . It changes the structure, aims, and networking mechanisms of the overall business system and, affects the levels and dimensions of this system. Digital technologies provide new business opportunities. The concept of digital entrepreneurship and its role within the transformation of the innovation system, leads to the distinction of the determinants of digital entrepreneurship with dimensions of the innovation system, which the entrepreneur (behavioral, competence, and mentality patterns), the entrepreneurial process (digitalization in organizational management processes, transformations within strategic and operational activities, and digital start-up establishment), and its relevant ecosystem (infrastructure and institutions have on digital entrepreneurship development). The economic performance and innovation success of countries depend on digital technology developments. Digitalization associated with changes related to big data analytics, the adoption of digital technologies, and an increase in the utilization. As digitalization concerns social life, it determines the transformation of entrepreneurial and business models in industries. The main reason is the changing needs of society (by new demands or by industry) regarding products and services (connectivity and individualization) determine in the value-creation process and communication and cooperation patterns, innovative transformations of business models. By restructuring business patterns in all industrial sectors, digitalization becomes a source for innovation. Digital technologies result in business opportunities. The integration of digitalization in business processes with internal changes related to new organizational management strategies and entrepreneurial processes . External system conditions (institutional influence, new market tendencies, changes in competitive advantages) and social attitudes (digital trust, technology adoption) also have a significant effect. It is the whole mechanism of digital entrepreneurship with respect to its role within the innovation system, rely its transformations and sustainable transitions and includes communication and interaction patterns of involved innovation agents, opportunity assessment, and resource considerations as part of a comprehensive and sustainable innovation process. Innovation is a new combination of factors that determines creative destruction and relates to five core spheres, sources of raw materials, products, methods of production, markets, and industry structure. The entrepreneurs contributions to knowledge formation depend on the economic and technical competences and knowledge and their perception of the environment and opportunities. The other important determinant is the incentive for innovation, particularly the motivation for designing or following the innovative environment. The innovation system, a broad range of elements and their interactions on different levels (from internal management processes to institutional networks), under the effects of political, cultural and knowledge creation and dissemination as well as further innovative performance . Strong forces of innovation systems are the entrepreneurial activities .

1. Prerequisites for digitalization

a. Digital capabilities,

b. Adoption of digital drivers,

c. Digital facilities,

2. Dynamic shifts in the transformation of business considerations

a. Digital features in operation activities,

b. Merging of value creation,

c. Revenue mechanism,

d. Competition and leadership,

d. Knowledge acquisition and strategic learning,

e. Digital business tendencies,

Entrepreneur	Description
Social impact	Social positioning, Inequality, potential, Entrepreneurship success
Digital behavior	Digital behavior, business opportunities Digital entrepreneurial intentions, Entrepreneurial perception, Decision-making process
Knowledge	Knowledge orchestration; Entrepreneurial knowledge; Competences
Digital determinants	Factors for success, capabilities, knowledge and learning, Social media and big data, Digital artifacts, Digital platforms, Digital users, Internet

Entrepreneur	Description
	adoption.
Digital and innovative orientation	Digital business strategy, Management vision, Digital orientation, IT management, IT infrastructure.
Value	Value creation, Revenue mechanism, Cost saving, Resource configurations.
Marketing	Digital Marketing
Social Impact	Cities facilitating digital entrepreneurship, Living labs for promoting digital entrepreneurship, Regional digital strategy,
Facilitating conditions for digital entrepreneurship	Business incubation facilities, Information, technology and institutional support
Process with the economic system	Competition, Transformation of value categories, Digital infrastructure, Digital users, Spatial, temporal, and spillover factors, Resource and module networks, Institutional barriers and socio-cultural restrictions within digital entrepreneurship, Dimensions of digital context, Regional ICT access.
Social Networks	A partnership of different stakeholders, social capital through social networks

5. EXAMPLES

(iii) Apple computers, Instagram and Amazon, Slack and Dropbox good examples of companies that used the internet to scale. Companies that create subscription boxes, sell online courses, or provide software as a service (SaaS) products are good examples.

(iv) Digital commerce products include e-books, online education, membership sites, downloadable software, web hosting, and software as a service ("SaaS"). The Rainmaker Digital introduced, good examples of each of those types of products .

(v) The advantages of digital business include developing business activities, extend businesses by starting new ventures, improving business intelligence and communicating with large number of customers in less time.

(vi) The growth of digital entrepreneurship can also lead to invention of new methods and technologies. BMC Digital Enterprise Management (DEM) is a set of IT solutions designed to make digital business fast, seamless, and optimized from mainframe to mobile to cloud and beyond.

(vii) A Digital Enterprise is a business that has completed a digitalization strategy (digital transformation) to fully incorporate digital tools and technologies across all aspects of their operations. This entrepreneur development process helps new firms or ventures get better in achieving their goals, improve business and the nation's economy.

(viii) Entrepreneurship-Small business, Large company, Scalable startup, Social, Innovative Hustler, Imitator, Researcher (i). passionate, Successful entrepreneurs have a passion (ii).Business savvy, (iii) .Confident. (iv) .Good Planners.(v). Money managers.(vii). Never give up hope.

6. CHALLENGES

1) The long-term challenge for businesses today is to remain relevant to digital customers. Digital technology must be at the core of what companies are doing. Companies that have successfully implemented a digital transformation, prove to be more competitive and innovative.

2) Becoming a digital enterprise requires a new way of looking at all your business processes through a digital lens, both in the workplace and in customer engagement. A company that embraces information technology and uses it to engage customers in new and innovative ways, has more chance to succeed.

3). A digital enterprise is an organization in which digital technology is at the centre of all their business processes. It affects the way the organization operates, develops products and services, generates revenue and engages with customers. A digital enterprise leverages technology in support of its mission and values.

4). A company that successfully transforms to a digital enterprise uses technology as a competitive advantage in its internal and external operations. As a result, it will be more economically efficient and more flexible to adapt to market changes.

5). Digital technology will continue to transform the infrastructure, business processes, products and business models of organizations.

6). Information technology drives the acceleration and transformation of business models. By deploying predictive analytics, you can eliminate barriers that hinder the speed and success of innovative projects. You cannot be blind for the disruption that the implementation of digital technology is generating in all industries.

7) Embracing digital technology is not enough. While implementing new technologies in your organization, you will have to adapt your IT and business models. It is recommended to develop an agile model that allows technology to align more closely and be at the core of your company strategy.

7. DIGITAL TRANSFORMATION

(a) A successful digital transformation relies heavily on the ability of a company to assemble teams that can quickly

deliver innovative applications that support business priorities. If your technology responsiveness falls short, or if your technology teams fail to be at the heart of your enterprise strategy, you risk losing money, innovation opportunities, competitiveness and in the end your customers.

(b) One of the biggest contributors to this responsiveness gap is the **IT team's lack of resources**. While your IT-department is challenged to do more, important innovation projects get delayed or deprioritized because of this limited resources obstacle. The solution is to **team up with a strong partner,** such as Docbyte, that can rapidly provide the specialized teams you need for the enhancement of your digital transformation.

(c) Becoming a digital enterprise is more than just implementing IT-programs. It is the fusion of these digital elements and the underlying strategy to drive efficiency and productivity.

8. COMPETITIVE ADVANTAGES

i) **Gaining a competitive advantage** is one of the biggest reasons for companies to start with a digital transformation. But achieving and maintaining a competitive advantage is not possible if a business is not productive. Increasing your productivity is more than just adding a few new processes. Instead, you need to **reorganize your business operation** and the way your employees work . Start by **eliminating waste** of pointless paperwork and **optimize complicated processes by digitizing and automating** the way your employees collaborate.

(ii) Smart mobile workplace solutions may just be what your organization needs.

iii) The biggest challenge of the digital transformation of your enterprise is not the technology, it is **the people.** Success largely depends on how well your digital leaders like the CEO, CTO or CIO define, manage and communicate the transformation and involve employees.

iv) A successful digital enterprise integrates information, processes, work and people so that the entire organization can **collaborate more efficiently and effectively**. Tools to boost productivity, such as enterprise information management solutions **c**an play an important role in the digital transformation of companies.

v) The rise of digital businesses have impact on the way individuals work and the way companies do business in the future. With this global digital transformation in store, companies considers digital trust. Digital ecosystems expose all stakeholders trust in the security of the data and communication, as well as the protection of their intellectual property.

9. DIGITAL ENTREPRENEURSHIP AND SUCCESS

1. The best data identification and get recognition.
2. Crafting a business idea and prototyped digitally.
3. Improving the business idea faster than anyone else.
4. Switching between different business ideas, and revenue sources.
5. Recognising the global business from the beginning, people from around the world keep trying to break into others business.

10. CONCLUSION

Digital entrepreneurship initiate a strategy with availing opportunity and coping up with risk. In a real world, digital entrepreneurship encourages new possibilities for thinking of becoming an entrepreneur. Some opportunities are more technical, with the basic skills of digital entrepreneurship. The basic skills consists new customers online, prototyping new business ideas, and improving business ideas based on data. The rise of digital businesses have impact on the way individuals work and the companies do business in the future. A successful digital enterprise integrates information, processes, work and people so that the entire organization can **collaborate more efficiently and effectively.** The implication of the innovation system approach for understanding digital entrepreneurship is based on the idea that digitalization, with its risks and opportunities, may be considered one of a number of societal challenges. Successfully managed, digital entrepreneurship requires a comprehensive innovation system approach that helps us to better understand the various effects of digitalization with respect to different stakeholders and dimensions of the system . A successful digital transformation expose ability of a company to assemble teams, quickly deliver innovative applications supporting business priorities. Technology responsiveness and teams effort to be at the heart of enterprise strategy, gaining money, innovation opportunities, competitiveness and favor of customers.

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A Determining Factor for Implementing MIS and E-learning in Educational Institutes through Software Development Methodology

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Abstract: ***The use of information and communication technology (ICT) applications in educational institutes is becoming a frequent nowadays. E-learning Is the "learning" process revolution enabled by new technologies that, hopefully, will present an effective and efficient learning process that doesn't exist today. Learning management systems (LMSs) are responsible for "learning" activities, while university management information systems (UMISs) are responsible for handling University managerial activities. Most institutions adopt the use of MIS and e-learning platforms in complementing teaching and learning activities. However, software development methodology (SDM) plays a vital role in developing any software project. Choosing appropriate and suitable SDM in implementing MIS and E-learning for educational institutes is paramount important. The paper is a review research that provide development requirements in choosing suitable SDM for implementing MIS and E-learning in educational institutes. The paper recommends that educational institutes should have a system analyst expert that will provide them with software related advice and guidance, developers should adhere strictly with the requirements of educational institutes, and finally there should be a periodic review of the implemented system to ensure effective productivity.***

Keywords: ***Educational Institutes, E-learning, Implementation, MIS, Software Development Methodology.***

1. INTRODUCTION

Software development methodology (SDM) serve as the process for developing and managing software projects. It gives clear indications on the steps needed and requirements for developing the projects.

There are several types or categories of SDM which includes waterfall, spiral, agile, crystal method, Evo, unified process, etc. Waterfall methods is a traditional and linear SDM that emphasizes on collecting software requirements as well as designing the architecture of the software before making the real development and testing [1]. Waterfall model usually, is a sequential or successive process that make progress to be made in a downwards manner with list of phases that must be executed and completed one after another in order to successfully build a software project. That is, moving to the subsequent phases or levels can be done when its immediate previous phase is done completely. In this case, each phase of the model can endlessly repeated until it is perfected or the desired result is achieved. The model has five phases as shown in the figure below, the phases include analysis phase, design phase, implementation phase, testing phase and maintenance phase [2].

Analysis Phase deals with requirements specification of the software project, it is a comprehensive and full explanation or description of the actions of the software or application to be developed. At this phase, analysts are expected to prepare and define functional and non-functional requirements of the project. The functional requirements will describe the users' interactions with the software which may include purpose of the software, its scope, attributes and characteristics as well as interface and database requirements. The non-functional requirements will contain various criteria, constraints, limitations, and requirements that will be executed on the development and operation or function of the software project than on specific action. This may contain items such as reliability, scalability, testability, availability, maintainability, performance, and quality standards. Design Phase usually serve as the planning and problem-solving stage of software project. Developers and designers will provide both preliminary and detailed design of the system which may include algorithm, software architecture and styles, database structures as well as the logical models, concept, user interaction interface, and data dictionary definition [2].

Implementation Phase is the executable stage where requirements and design specifications or plans are put into programming and deployment. It involves writing the real codes, creating database and text files as well as translating the entire requirements and plans to a construction atmosphere. Testing Phase deals with verification and validation of the software project to ensure that the project satisfies the original conditions and specifications as well as achieves the intended objectives. This phase involves identifying errors (bugs), correction and refined of errors accordingly. Maintenance Phase deals with modification of a software solution after

conveyance and deployment to improve its production, redress errors, as well as improving performance and quality of the system. Other maintenance activities or processes can be added to this phase such as adapting software to its environment, accommodating new user requirements, and increasing software reliability [2].

In another research that presented an imitation (simulation) model to demonstrate the various phases of the Waterfall SDLC model that includes related resources, input, workflow, and output. The simulation or imitation procedure is done using a tool known as Simphony.NET that gives adequate atmosphere to create, manage, and control the different objects used in the imitation or simulation model. The essence of the model is to give assurance that the interval period between each project arrival is same with the interval period between each project production. For instance, when a new project is developing in every 10 days, it means a project must be delivered in every other 10 days by taking into consideration the optimal number of employees to be assigned to every project. The number of the idle or shiftless as well as busy or full resources should also be kept as minimum as possible. This model technically entails dividing the waterfall model into independent phases, understand the concept and requirements contains in every phase, define the resources, tasks, entities, and the work flow of every phase, simulate each phase apart and record the results, finally integrate the whole phases together and simulate the system while recording the results as well [2].

The Simphony.NET comprises of a working situation with a substance library that allow the development of new simulation or imitation setups that is easier and efficient. A project in Simphony.NET is usually done through collection of modelling essentials that are linked to one another in a logical association. The proposed model contains set of resource, line-up, task, possibility branch, capture, releases, and counter demonstration elements. The resources are the basic personnel and workers allocated to work on the stages of the Waterfall model. Each resource has a first-in first-out (FIFO) queue that accrues and stores processing actions to be treated later [2].

However, the idea of waterfall model in software engineering was formally introduced by Winston Royce in 1970. The philosophy of the model was emanated from the hardware manufacturing strategies as well as construction strategies that were in practice as at 70s which makes it to be structured in nature. The production cycle of waterfall model growths serially from one phase to the other. The serial or sequential structured approach allows the design team to move to the next phase of the design when the previous phase of the design is fully accomplished or completed. Therefore, considerable total of time is usually consumed in each stage of design to clear any doubts or error as well as to meet up the requirements specified in each phase or stage. During the implementation, the design stage will be translated into coding exactly as they are without any changes. Waterfall model also places emphasis on documentation of every development stage [3]. The diagram below presents the phases or stages of waterfall model:

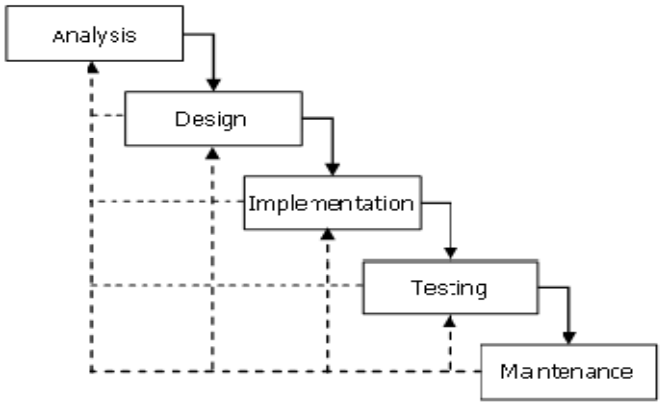


Fig. 1. Stages of Waterfall SDM [2]

Agile method is meant to provide or accommodate change in the software requirements. It reduces the cost of development while providing a reasonable quality software. The method is characterized by many incremental releases that can be generated within a short time. All the team members usually participate in all the aspects of the software project ranges from planning, implementation or testing. Sometimes, client representative may be included among the team members. Agile method is broken into SCRUM, dynamic system development model (DSDM), rapid application development (RAD), Extreme Programming (XP), feature driven development (FDD) and internet-speed development [1].

Agile model emerged in 1990s when developers agreed to breakdown the traditional structured, segmented, bureaucratic approaches to software development in order to moved towards more flexible development approaches. The 'Agile' or 'Lightweight' models are formally defined in a research paper by Edmonds in 1974. Some of the most prominent and general agile methods of software development include 'Scrum' in 1995, 'Crystal Clear', 'Extreme Programming' in 1996, 'Adaptive Software Development', 'Dynamic Systems Development Method' in 1995 and 'Feature Driven Development'. However, in the year 2001, some pioneers in agile software development came together and open the 'Agile Manifesto', which is a set of canonical rules of sorts, for agile software development methods [3].

The agile method focuses on the quickness and flexibility in development. Instead of the one with time-consuming or slow and rigid development schedule or approach, the methods involve multiple iterative development schedules or tasks which will improve the output with every iteration. Every stage or iteration goes through all the steps of design, coding and testing. The design is not set in stone and is kept open to last minute changes due to iterative execution. The team construction is cross functional, closely knit and self-organizing. The design idea is never totally frozen or set in stone, but it's allowed to evolve as new ideas come in with

each release. It pays less importance to the documentation and give more emphasis to the speed of delivering a working program. The methods carry customers or clients along by providing demonstrations of each iteration to them and take their feedback for the next course of changes in the next iteration. The iterative cycle continues till the customer or client is delivered with a product which exactly meets his/her expectations [3]. The diagram below presents the agile SDM:

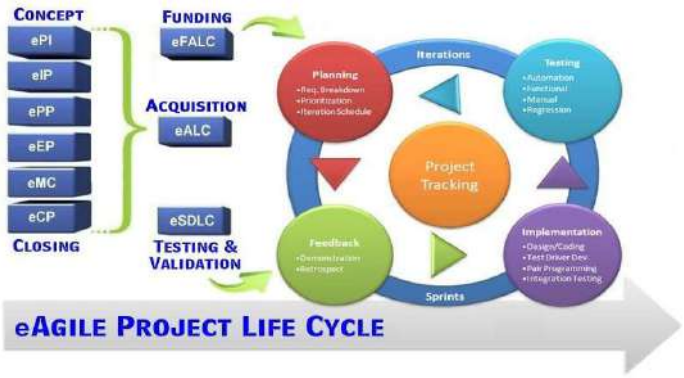


Fig. 2. Agile SDM [3]

The spiral model is a methodology used in developing software project. The method usually consider failure as a big risk. Projects are always starting at smallest unit with investigation on the highest risk related to the project. Thereafter, the project can be expanded slowly to other areas once the implemented components are functioning. This method is usually considered for large projects [1].

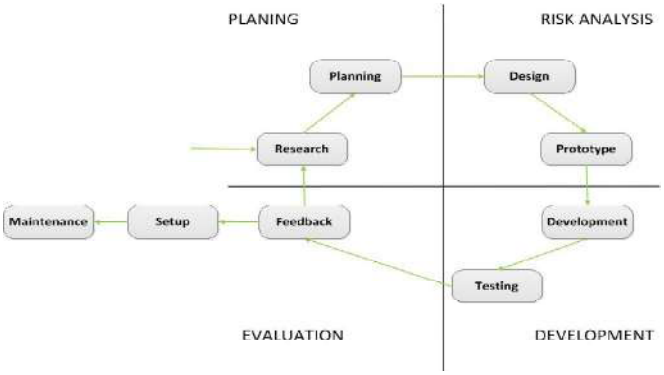


Fig. 3. Spiral SMD [4]

The spiral methodology focuses on identifying objectives and analysing viable alternatives in the setting well documented for the project constrains. Spiral model has four (4) phases namely planning, risk analysis, development and evaluation. Every project will pass through each phase several times in the above-mentioned order until the software project or application is ready implementation or to be put on the live environment. The methodology give emphasis on risk analysis and continuous evaluation on multiple alternatives before proceeding to implementing one [4]. The diagram below presents the spiral model:

Educational institutes adopt the use of technology especially ICT in both teaching and administrative activities within the institutes. Sometimes all stakeholders access these applications. The commonly used innovations in these institutes include management information system (MIS) and electronic learning (e-learning) platforms.

MIS serve as the process of transforming accepted inputs into results or output which is regarded as information management. It is one of the types of information system. It also helps organization in making decisions according to the analysis conducted on the collected data [5]. MIS is used in most institutes in managing records of both students and staff. It could be records of fees, registration details, exams, enrollment, or even payroll of the staff and human resource records. These applications usually come either as standalone or in a web-based format with real time processing.

E-learning on the other hand is considered as utilizing ICT facilities in promoting and expanding educational interactions as well as resources among students, teachers, and learning communities [6]. E-learning is used in aiding teaching and learning in educational institutes. Schools usually adopts the use of e-learning in different format and according to the level of their implementation capacities.

However, implementing MIS and E-learning in educational institutes will solely depends on the suitability of the SDM chosen. Therefore, this paper will provide avenue for determining the suitable SDM for implementing MIS and E-learning in educational institutes. It can be achieved with the following objectives:

To identify major activities covers by the MIS and E-learning in educational institutes

To provide requirements for determining the suitability of SDM in implementing MIS and E-learning in educational institutes.

2. METHODOLOGY

The paper is a descriptive research that gives insight about activities involve in MIS and E-learning applications in

educational institutes, it also provides requirements for choosing suitable SDM in implementing MIS and E-learning in educational institutes. Data were collected through articles and journals.

3. RESULTS

This section provides the results and discussion of the findings of the paper according the stated objectives. It is presented using table.

TABLE 1: Major MIS and E-learning Activities in Educational Institutes [7]

S/No	Task/Activity	Remark
1.	Registration/Enrolment	Student only
2.	Learning Materials	Staff and Student
3.	Assignment	Staff and Student
4.	Result/Status	Staff and Student
5.	Administrative Circular	Staff and Student
6.	Evaluation	Staff and Management

The table above provide major activities performed in either MIS or E-learning applications in educational institutes. The table is divided into three (3) columns with serial number, task/activity and remark respectively. The first identified activity is registration and enrolment. This task is applicable to only students. Each student is expected to register and enroll for a particular session. Most MIS permits students to register by themselves and some will be done by the assigned registration officer. Once the student is registered and enrolled, he/she can access other e-facilities within the institutes which include e-learning platform if any.

Learning materials is applicable to both staff and students. Staff can upload learning and other relevant materials or documents for students to download. Assignment is also applicable to both staff and students. Staff can give assignments or tasks which students will submit after completing the task and hence the staff can also download the assignments and grade them accordingly. Result and status are also applicable to both staff and students. Students can check status of assignment submitted as well as their individual results. Staff can also download course results or class list for particular subject or class.

Both staff and students can also receive administrative circular from the management or higher authority according to the level of priority. Evaluation is only applicable to staff and management. Staff can evaluate the performance of the students, while management will evaluate the performance and efficiency of staff.

The above table provide requirements for determining a suitable SDM for implementing MIS and E-learning in educational institutes. The table contains three (3) requirements namely actors' identification, element specification, and process assignment.

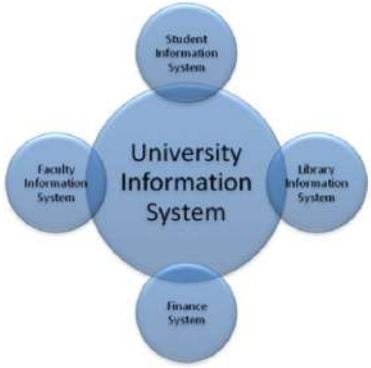
TABLE 2: Requirements for Determining Suitable SDM in Implementing MIS and E-learning [8]

S/No	Requirements	Remark
1.	Actors' Identification	It contains internal and external actors
2.	Element Specification	Elements contains in each actor
3.	Process Assignment	Assigning process to the specified elements alongside the identified actors

Actors identification deals with both internal and external actors. The internal actors may consist of students, academic staff, non-academic staff, and supportive staff. While the external actors may involve education policy makers and regulators, parents or guardians of students, visitors or prospective students. Elements contains in each actor will also be specified. For example, we may have lesson, learning materials and facilities in the aspect of student. These are some elements required by the student.

Process assignment is also an important requirement. It deals with assigning process to the specified elements alongside the identified actors. For instance, the identified elements under student are lesson, learning materials and facilities. These can be assigned to students in a manner that it can be accessible (i.e. how does the student uses these elements should be stated).

4. **University management information system.** Managing universities activities requires a university management information system. UMIS refers broadly to a computer based system "collection of hardware, software, people, data, and information" that provides managers with the tools for organizing, evaluating, and efficiently running their departments. Examples of UMIS components include a student information system (SIS), a library information system, a faculty information system, and a finance system, as illustrated in Figure Below.



Student information system. SIS is the information system responsible for managing students' data at the university. A typical student record in the SIS might includes the student's ID, social security number, name, age, gender, address, email, username, password, date of birth, faculty, university status, and department.

Library information system. Library information systems are responsible for managing and automating libraries within faculties and/or universities. Automated libraries contain material in digitized form.The database records in these libraries reflect the managerial tasks performed by librarians in order to effectively manage the libraries. A typical record will include ISBN, name, authors, keywords, and data like section, a list of all books, a list of available books, a list of borrowed books, who is borrowing, when the books are due to return, and so forth.

Faculty information system. Faculty information systems manage and automate managerial activities related to instructors, employees, courses, and the intersections between them. A typical faculty information system database record includes

1) faculty data: ID, name, departments, courses data;
2) course information: course id, name, description, instructors;
3) faculty personal data: ID, social security number, name, age, gender, address, email, username, password, date of birth, year, department;
4) employee data, which is the same as the instructor's data.

Finance system. A finance system manages financial issues related to any organization, even if this organization is a faculty or university. However, I believe financial issues of the educational institution doesn't have anything to do with elearning at all.

UMIS role. UMIS achieved success over the years and proved efficiency and effectiveness within educational

institutions. UMIS is required for any successful eLearning implementation in the three learning models, but with constraints about the role it should play.

4. CONCLUSION

Software development methodology is an important aspect and process in building software projects. Choosing appropriate and suitable SDM will lead to success towards having a sustainable software project. Educational institutes mostly use MIS and E-learning applications in running day to day activities of their respective institutes. The paper provides requirements for choosing appropriate SDM in implementing MIS and E-learning in educational institutes. The paper also makes the following recommendations:

1. Educational institutes should have a system analyst expert that will provide them with software related guidance and advice.
2. Developers should adhere strictly with the requirements of the educational institutes.
3. Periodic review of the implemented system should be conducted.

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Women Entrepreneurship & Financial Inclusion

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Abstract: The buzz word now a days is Atmanirbhar Bharat .For becoming Atmanirbhar we need two strong pillars one is Entrepreneurs especially in our study women entrepreneurs and second the availability of Finance to them. It has been seen that mostly the women entrepreneurs face hurdle in setting up the business not due to lack of ideas but due to lack of funds. Financial Inclusion is a ray of hope for these women who basically belong to the lower strata of society ie rural segment and the section that is almost ignored by many formal financial sections of society. As per the World Bank Financial Inclusion is "the poor households have access to useful and reasonable financial products, services that congregate their desires – transactions, savings, credit and insurance – deliver in a accountable way." It is important to view the term Financial Inclusion as a relative dimension. The degree of financial inclusion varies between countries, depending on the stage of growth. It is shocking that India ranks second in the world after China in terms of financially excluded households. The central bank has also given high importance to financial inclusion in the inclusive growth phase of the economy. The paper focuses to understand the concept of the relation of women entrepreneurs and Financial Inclusion, the challenges the women entrepreneurs face in developing nation, and what can be the solution to improve the linkage between women entrepreneurship and Financial Inclusion.

Keywords: Women Entrepreneurship, Financial Inclusion, bottom of pyramid, Microcredit, Monitoring of Financial Inclusion Progress (MFPI)

1. INTRODUCTION

The term Financial Inclusion means that society's poor strata are included, which cannot be supported for any purpose, whether the formal organization requires their illiteracy, non-awareness or formality. The government of developing countries is focused on providing financial strength to the bottom of the pyramid division to make it self-sufficient. World Bank Financial Inclusion is "poor households have access in a responsible manner to useful and reasonable financial products, services that combine their desires, transactions, savings, credit and insurance." The term Financial Inclusion is important to consider as a relative dimension. Depending on the stage of growth, the degree of financial inclusion varies between countries.

It is surprising that, in terms of financially excluded households, India ranks second in the world after China. In the inclusive growth process of the economy, the central bank has also given high importance to financial inclusion. A community of women who start, manage and run a business enterprise can be described as female entrepreneurs. A woman's business can therefore be defined as "an enterprise owned and controlled by women with a minimum financial interest of 51% of the capital and giving women at least 51% of the employment generated in the enterprise." Women entrepreneurs make up 10 percent of our country's number of entrepreneurs. With a lower literacy rate than men, they make up 50 percent of our country's population. This statistical reality demonstrates that women should not be allowed to make their share of the economic contribution to the country in order to achieve the economic development of the nation. Having women come out and become entrepreneurs is one way of doing it. Inside the traditional culture, They are confined to the four walls, playing household roles, but they come out to engage in all kinds of events in modern society. Women's entrepreneurship is typically found in the extension of their kitchen operations, especially in the commercial preparation of the 3'P's, namely

Pickles, Papads and Powder. Few of them are involved in the accommodation, catering, educational services, consultancy or public relations services market, beauty clinics, etc. Because of economic forces that motivate them to be on their own, women join entrepreneurship and urge them to do something independently. Women tend to work from home, struggle to get acceptable jobs and desire for social recognition mo In engineering, medicine, law, etc., we see many female professionals. They are also setting up clinics, training centres, etc. Due to their effect on job creation, economic development and women's empowerment, financial inclusion and female entrepreneurship concern policymakers.

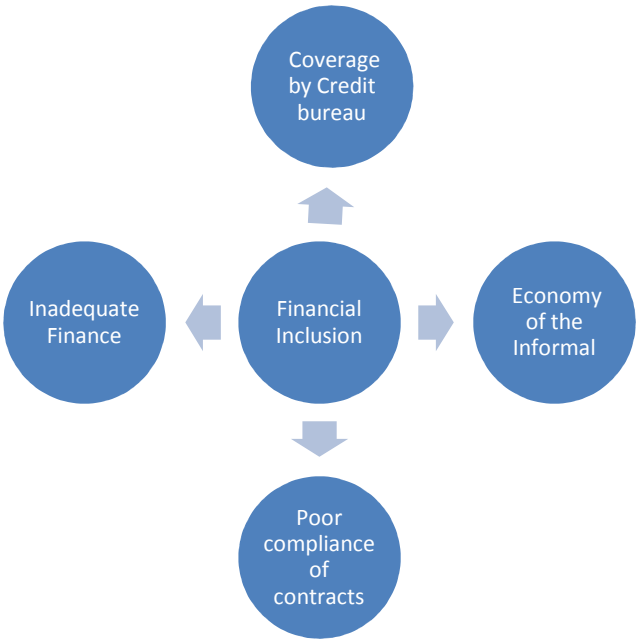
2. OBJECTIVES OF STUDY

1. To research and appreciate the Financial Inclusion conceptual structure.
2. To recognize the role of female entrepreneurs worldwide.
3. Highlight the steps taken by the Government of India and RBI to encourage, through financial inclusion, women's entrepreneurship.
4. To explore the future of women's entrepreneurship through the assistance of financial inclusion.
5. To research the challenges that women entrepreneurs encounter while carrying out personal and professional roles.

3. RESEARCH DESIGN & METHODOLOGY

The secondary sources were tapped for the purpose of the study. Suitable books, journals, papers, magazines, newspaper accounts etc. are secondary sources. There will be a summary of the current literature on the subject. The information used in this research paper is collected from the RBI website and from various reports submitted to the Government of India on women's entrepreneurship, financial inclusion, Grameen Bank Reports, the Economic Intelligence Service, the Indian Economy Monitoring Center, Indian Banking Statistics, newspapers, journals and the Internet.

4. WOMEN'S ISSUES WITH ENTREPRENEURSHIP AND FINANCIAL INCLUSION IN INDIA



So far, the main emphasis is on the importance and challenges of the analysis, but before doing any research, it is also important to bring some light on the financial challenges of female entrepreneurship. The following points highlight India's challenges:-

Informal Economy

In the organised market, there are fewer than 20 percent of the workforce working, and it is almost difficult to obtain job and income data for the majority employed in this sector. As just 1.7 percent of the Indian population is a daily income tax payer, the condition is the same for tax payers. Some organisations have often informally handled their financial reports.

Coverage by credit bureau

For developing economies like India, the issue of credit bureau coverage is extremely important because most credit seekers are new to credit and have not previously approached a formal lending institution. The coverage of the Credit Bureau is less than 45 percent because the applicants are rejected due to the lack of historical data on past credit results.

Inadequate finance

India's public infrastructure is being strengthened. The number of branches of commercial banks has almost doubled, but the number is still low, from 71, 685 in 2006 to over 138, 850 in 2016.

Poor compliance of contracts

The lack of confidence in contract enforcement capabilities by public authorities has dissuaded institutional lenders from large-scale lending to the masses. In the case of defaulting consumers, they find it difficult to collect the instalments, which results in increasing the cost of collections and recovery.

Women Entrepreneurship Constraints

As a result of the conversation with women entrepreneurs, we learned about the challenges they face on a daily basis that hinder their success as business women.

Family emotional burden

They are overburdened with family commitments such as extra attention to husband, kids, and laws that take away a lot of their time and energy. It will be very difficult under certain situations, To focus and effectively operate the company.

Gender Discrimination

Entrepreneurship has historically been seen as a male preserve for Gender Discrimination.Both of these have contributed to a split in the creation of women entrepreneurs.

Lack of Intelligence

Due to a lack of proper education, women entrepreneurs remain in the dark about new technology growth, new manufacturing methods, marketing and other government funding that will help them grow, Motivate them to flourish.

Social challenges

In Indian communities the practises and customs prevailed against women often stand as an obstacle before them to rise and growProspering

Shortage of Raw Material

Women entrepreneurs are really facing a difficult task of getting the required raw materials and other necessary inputs for theWhen the prices are very high, businesses.

Competition Barriers

They have to work hard to survive in the market in a market where competition is too strong against the organised sector and their male counterparts who have considerable experience and willingness to adopt

5. ADVANCED TECHNOLOGY IN BUSINESS MANAGEMENT

Lack of decision making authority

In management roles such as planning, scheduling, managing, coordinating, staffing, directing, motivating etc. of an organization, women entrepreneurs are not successful. Therefore, women's reduced and restricted managerial capability has become a concern for To effectively run the enterprise. They are not able to make strategic choices at the right time, either.

Lack of Self Confidence

They lack self-confidence and sometimes do not make improvements.Among traditional and vocational positions.

List of Policies, Schemes and Women Entrepreneur Associations for Women Entrepreneurs in India

Policies and Schemes for Women Entrepreneurs in India	Women Entrepreneur Associations for Women Entrepreneurs in India
Prime Minister's Rozgar Yojana (PMRY)	Federation of Indian Women Entrepreneurs (FIWE)
MSE Cluster Development Programme	Consortium of Women Entrepreneurs(CWEI)
Credit Guarantee Fund Scheme for Micro and Small Enterprises	Association of Lady Entrepreneurs of Andhra Pradesh
Schemes of Ministry of MSME	Association of Lady Entrepreneurs of Andhra Pradesh
Trade related entrepreneurship assistance and development (TREAD) scheme for women	Association of Women Entrepreneurs of Karnataka (AWAKE)
Mahila Coir Yojana	Self-Employed Women's Association (SEWA)
Schemes of Ministry of Women and Child Development	
Support to Training and Employment	

6. CONCLUSION

The analysis is primarily done to try to communicate the efforts of India's Financial Inclusion Plan and Women entrepreneurship relationship. The improvements that arise after the plans have been implemented. The study gives the sense of positive relation between financial inclusion and success of women entrepreneurs, its aims, its challenges and also the initiatives of the government to encourage financial inclusion in India. For sustainable development and equitable distribution of resources, FI and value the women power is also important. However, it is unfortunate that most of India's rural areas lack basic amenities to women for becoming self independent so that they become both socially and economically independent. Many individuals that have access to banking services have little or no understanding of the banking facilities that have created chaos. The RBI and the Government of India are charged with raising awareness at all levels. The FIP template has since been revised and rechristened as 'Financial Inclusion Monitoring Progress (MPFI)' to capture more granular data and qualitative aspects at the ground level.Thus the Government sould work on linking the women entrepreneurship and Financial Inclusion.

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Micro Finance and Entrepreneurship Development

Ruchika Gahlot

Abstract: Microfinance is the arrangement that gives admittance to different monetary administrations, for example, credit, investment funds, miniature protection, settlements, renting to low-pay customers including buyers and the independently employed, who generally need admittance to banking and related administrations. Its primary goal is to give a perpetual admittance to suitable monetary administrations including protection, investment funds, and asset move. Miniature money turns out to be all the more generally acknowledged and moves into standard, the stock of administrations to poor may likewise increment, improving the productivity what's more, outreach while bringing down the expense.

Keywords: Micro Finance, Self Employed, Entrepreneur

1. INTRODUCTION

Microfinance is a classification of monetary administrations focusing on people and independent ventures who need admittance to ordinary banking and related administrations. Microfinance incorporates microcredit, the arrangement of little advances to helpless customers; reserve funds and financial records; micro insurance; and installment frameworks, among other services. Microfinance administrations are intended to arrive at rejected clients, typically less fortunate populace portions, perhaps socially minimized, or topographically more detached, and to help them become self-sufficient.

Microfinance at first had a restricted definition: the arrangement of microloans to helpless business visionaries and independent ventures lacking admittance to credit. The two fundamental instruments for the conveyance of monetary administrations to such customers were: (1) relationship-based banking for singular business visionaries and independent ventures; and (2) bunch based models, where a few business people meet up to apply for credits and different administrations as a gathering. After some time, microfinance has arisen as a bigger development whose item seems to be: "a world wherein as everybody, particularly poor people and socially underestimated individuals and families approach a wide scope of moderate, top notch monetary items and administrations, including acknowledge as well as reserve funds, protection, installment administrations, and asset transfers.

The leading cause of the failure of formal banking institutions in India while lending to the rural poor is the absence of proof of recognised employment or collateral that can be offered by the poor while applying for loans. The high risk and transaction costs of small loan savings deposits create difficulty for the banks as well. This leaves the poor with no alternative but to borrow money from local moneylenders at high-interest rates.

2. HISTORY OF MICRO FINANCE IN INDIA

In India, the first initiative to introduce microfinance was the Self-Employed Women's Association (SEWA) in Gujarat, which established SEWA Bank in 1974. Since then, this bank has been providing financial services to individuals who wish to grow their own businesses in rural areas. One successful initiative is Kudumbashree, the Kerala state's Poverty Eradication Mission that was launched in 1998. This female-led community organisation of Neighbourhood Groups (NHGs) brings women from rural and urban areas together to fight for their rights and helps empower them. Through these NHGs, women work on a variety of issues like health, nutrition and agriculture. They can collect income and seek microcredit while working under this scheme. Such small-scale initiatives are promoting financial independence in underprivileged areas.

Today the World bank estimates that more than 16 millon are served by some 7000 microfinance institutions all over the world. In a gathering at a Microcredit Summit in Washington DC the goal was reaching 100 million of the world's poorest people by credit from the world leaders and major financial institutions. The year 2005 was proclaimed as the International year of Microcredit by the economic and social council of the United Nations in a call for the financial and building sector to fuel the strong entrepreneur spirit of the people around the world. There were five major goals of The International Year of Microcredit. Those were:

- To promote the contribution of microfinance to the microfinance institutions.
- The promotion should be inclusive the financial sector.
- Make a supporting system for sustainable assess to financial services.
- Support strategic partnership by encouraging new partnerships and innovation to build and expand the outreach and success of microfinance for all.

3. ROLE OF MICRO FINANCE IN ENTREPRENEURSHIP DEVELOPMENT

The *importance of microfinance* is that it provides much-needed financial services to poor and low-income households,

entrepreneurs, and nascent businesses, which would otherwise not have access to such services. Following are the role of micro finance in entrepreneurship development:

Access: Banks essentially won't stretch out advances to those with practically zero resources, and by and large don't participate in the little size of advances commonly connected with miniature financing. Miniature financing depends on the way of thinking that even modest quantities of credit can help end the pattern of destitution. Numerous ladies and young ladies experience difficulty getting to formal monetary establishments as they don't have fitting distinguishing proof or affirmation of land and house proprietorship.

- Better loan repayment rates: Microfinance will in general objective ladies borrowers, who are genuinely more averse to default on their advances than men. These credits help enable ladies, and they are regularly more secure speculations for those advancing the assets.
- Extending education and health: Families getting microfinancing are less inclined to haul their youngsters out of school for monetary reasons and bound to have assets to pay for school charges or wellbeing administrations.
- Sustainability: Even a little working capital advance of $100 can be sufficient to dispatch a private company in an agricultural nation that could help the people haul themselves and their family out of destitution. These private companies can help make new work openings, which beneficially affect the neighborhood economy.
- Improved income and Nutrition: Through little advances ladies can get required horticulture sources of info, for example, improved seeds and composts to build profitability and healthful substance of yields and create more pay from the market.

4. CHALLENGES FACED BY MICRO FINANCE INSTITUTION

According to Nwanyawu, the following are some of the issues faced by microfinance institutions in India:

- Diversion of Micro Finance Fund: There have been a few instances of degenerate public authorities, redirecting credit implied for limited scope ranchers. It very well may be seen that due to the significant level of destitution in the nation, credits are redirected into taking care of issue of taking care of. Hence, miniature money should address the issue of the poor to raising their monetary maintainability, which for this situation isn't so.
- Inadequate finance: One of the basic issues confronting microfinance organizations in Nigeria is the absence of money expected to grow monetary administrations to customers. This essentially emerges from low capital base of the foundation, extreme fixed resource procurement, garish operational manner, failure to prepare stores, helpless loaning and faulty administration and the executives course of action.
- Unfavorable/Frequent Changes in Government Policies: Instability has affected adversely on the presentation of essential foundations liable for strategy observing and usage. There were instances of unexpected inversion of strategy which has come about to deficient and deserted activities. This makes twists in the full scale financial structure and low profitability.
- High Risk and Mounting Loan Losses: According to Anyanwu, about 70% of miniature credits given to miniature undertakings by means of government microfinance plot were not recuperated. A few people consider the to be as their a lot of the public cake and don't perceive any requirement for the reimbursement. The outcome of this is that it prompts different candidates not getting advance.
- Low Capacity and low Technical Skills on Micro financing: Management of micro finance institutions would require a family of information on miniature financing to effectively work in the business; notwithstanding, most staff enlisted in the microfinance organizations, especially at the board level, have practically zero involvement with microfinance practice.

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Ethical, Legal and Social Aspects of Information and Communication Technology

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Abstract: In this era of computers and communication technology where computers and internet have made their ways to every sphere of life from offices to residences, reservation counters to banks to post offices, small retail shops to big organizations, health care units to entertainment industries etc., there emerged numerous questions regarding the ethical and legal uses of Information and Communication Technology (ICT). Like any other technological inventions ICT too has created both positive and negative impacts on the society.

Keywords: Ethics, Internet, privacy, security, cybercrimes, piracy, Phishing, identity theft, ICT.

1. INTRODUCTION

Ethics defines what is good for anindividual as well as for the society and establishes the nature of duties that people owe themselves and one another. Human beings have the ability, partly innate and partly acquired to judge human actions as morally good or bad, right or wrong. Even though "good / right" and "bad / wrong" do not mean the same thing for all still, everyone possesses a notion of right and wrong. Early morning music practice or use of insecticides/ repellents in her house, for example, though is very much ethical to my next-door neighbour; they are certainly not so to me! These differences again are not only individual but also cultural. Polygamy, forexample, is a normalbehaviour and well acceptable to Muslims whereas not so for Hindus! Of course, in spite of all sorts of diversified opinions, ethics have a universal component. Killing an innocent person, for example, is not morally acceptable to anyone of us irrespective of our culture and belief. Though law often embodies ethical principles, law and ethics are far from co-extensive. In an ideal world, the moral and legal acts may mean the same but they are not same in the real world. Many acts that would be widely condemned as unethical are not prohibited by law and the reverse is also equally true.Not helping one's friend when he/she is in need, for example, may not seems to be moral but not violation of any law too. Our state forbids recruitment of a non-reserved category candidate against few reserved category seats but, does not it contradict the overt moral imperative that there should be no discrimination among people based on cast, creed, religion and colour? Though it would be exaggerating and sceptical to infer that there is no connection altogether between ethics and the law but at most what the law will give us is a rough indication of practices, rather than an absolute criterion, valid for a particular place at a particular time deemed socially desirable, partly for moral reasons and partly for others. [1][2]

2. ETHICAL, LEGAL AND SOCIAL ASPECTS OF ICT

Every technological invention has got both positive and negative impacts on the society. Einstein while giving the nuclear power theory as has neverexpected that his discovery shall ever be used for such a devastating destruction at Hiroshima and Nagasaki, it too was not known during the 19ths that communication technology of late shall have so many alarmingdirection associated with it.

For example, ICT provides easier and efficient means of storage and retrieval of information but at the same time suffers from piracy of copyrighted materials, software, data, music, video etc. at large scales. Internet provides instant access to all sorts of useful information at finger tip but at the same time suffers from plagiarism, illegal uploading, downloading, copying, stealing and misuse of intellectual property. ICT has created high-end job opportunities for the techies in one hand and on the other hand has created sever unemployment among non-tech groups. Communication Technology has made trade, investment, business simpler and unruffled through e-commerce and on-line transactions but suffers from cybercrimes, forgery, sabotage, hacking and loss.Internet has made the whole world a small intellectual village but at the same time is polluted with horrid contents like pornography, spam, worms and viruses. Therefore, it is high time now for careful inspection of the legal and ethical aspects of ICT as there are not enough guidelines available inthis field as comparedto those available in conventional branches of science and technology. More importantly, now ICT is not limited to the scientists and software engineers alone rather it has become a widespread phenomenon, affecting people at various stages in their role, as customers, service provider, participants, middlemen etc. So it has become the moral responsibility of the sociologist, business people and scientists to decide in which way ICT can be best utilized [3].

Fig. 1. Security Issues in ICT

New advances particularly in the field of information technology have brought new scientific gains to humans but it should be noted that the entry of new scientific and technological fields will always have ethical issues and limitations. One of the interesting and, of course, new topics in the field of information technology science is computer ethics or IT ethics. The study of computer ethics has long been considered by the researchers. Today, in the digital age, the society is dependent on computers in almost all its affairs, and the study of ethics in the field of computer and information technology must always be considered.

The growth and development of the Internet has made it possible to store a large number of individuals' personal data by relying on advanced information systems and the abuse of personal data and privacy violations in the field of information technology is increasing [4].

The lack of scientific integrity in educational environments that make the most use of technology is an issue that should be considered. Illegal downloading of software is common among all social classes specially the students. The use of social networks is an inseparable part of the lives of many people and the nature of students. These cases have different effects on their lifestyle, especially on their academic performance and the length of their studies [5], [6].

On the other hand, the number of unethical sites is rising every day and the conditions for access to these sites are easier than before and the mean age of people who visit these sites is reduced. Being exposed to the unethical sites also has the dangers of high-risk sexual behavior, social dilemmas and mental and psychological problems. Communicating with anonymous people and visiting them is increasing [7].

A large percentage of users are exposed to moral damages and IT abnormalities, and having a virtual identity has become a commonplace cause of many social abnormalities. The phenomenon of Internet addiction has long been considered in the developed countries as one of the consequences of the everincreasing development of the electronic communications network and has caused various harms to the individual, family and society.

The excessive use of social networks can lead to addiction and is not tolerated by many physical communities. The theft of software, films, music, etc. with copyrights has become common in some societies. Unauthorized access to the systems (hacking) is done using different and new methods and is increasing every day. Today hackers have posed the greatest challenge against IT ethics and with a widespread violation, they make numerous attempts to influence the commercial and banking accounts of individuals and try to violate individuals' privacy [3].

Many computer games are violent and stimulate aggressive antisocial behavior in addition to violent thoughts and feelings. Today, forging digital documents such as counterfeiting digital signatures, digital images, etc. is an important topic in the field of information security and computer ethics. Online gambling (using online websites where members can participate in a variety of games without having to be present at the site, in which everything is done online from opening an account to transferring funds, withdrawals, playing games, etc.) is increasing.

Cases such as cyber bullying and communicating with anonymous individuals, visiting them, sharing the stimulating content on the Internet, and sharing personal information on the Internet have been recognized as the dangers of Internet communications in the new era [4].

All of these cases are examples of issues that affect ethics in information technology and it is necessary to rank such issues in terms of society in order to provide a better insight to provide strategies and programs in which negative measuresare converted to the positive affairs or ethical issues in the field of information technology are observed.

3. RELATED WORK

The high use of the Internet has led to the negligence of other important parts of life, including sleep, work, and academic achievement. Users in the Internet environment can be anonymous and engage in behaviors that are inappropriate in most physical communities. On the other hand, providing fast, cheap and convenient access to the unethical sites can be considered as a disadvantage of the use of the Internet. [8]

Studies have shown that a high percentage of employees in the workplace use the Internet for non-work purposes. Meanwhile the most common non-work activities are: visiting the chat rooms, sports websites and stock investment websites [9]. Apart from all of this, computers and the Internet have the

potential to violate the privacy of users by hackers [10], [11]. Research shows that 75 percent of American children are willing to share their personal data and information with other Internet users in exchange for access to services and products provided on the Internet, which can be very dangerous [7].

In 2011, a research is conducted on the impact of virtual social networks on the academic achievement of students at Birjand University of Medical Sciences in eastern Iran. The result of this study showed that there is an inverse relationship between the use of social networks and the student's mean scores which is similar to the results of other research in this field. In this study, the most time spent on social networks is over the nights [12].

A research is conducted on the use of the Internet and social isolation among Iranian students. The study found that people who use the Internet and are addicted to social networks are faced with social isolation. It has also been shown that Internet addiction is 8.3% higher among Iranian students and the students who are addicted to the Internet feel lonelier and have less confidence than normal users [13].

Mobile cameras despite their useful applications could affect the privacy of others in public places. Although mobile phones have actually changed today's lifestyle, almost all of them are equipped with high-quality digital cameras. These cameras can capture images of people without their consent, violate their privacy, be published by the Internet and become available to others [14]. A study conducted in the United States of America in 2012 among the men showed that exposure to unethical sites has led to a high-risk sexual behavior among them [15].

Many investigations are conducted on the issue of sexually transmitted content since 2009 in many countries of the world including the United States, the United Kingdom, Canada, China and the Czech Republic. It should be noted that researches conducted in National Campaign for the Prevention of Juvenile Injuries and Pregnancies in the United States have presented significant outcomes in the prevalence of sexting among young Internet and mobile phone users [7], [13].

Aside from an easy access to these websites, animated computer games have also been developed that allow online gaming with the opposite sex; therefore, it is clear that a wide range of users, including children, can easily become addicted to the computer games while these games can have a lot of destructive effects [8].

On the other hand, computer games are often associated with adverse social phenomena such as violence and various types of addiction among the adolescents. A wide range of computer games provokes violence indirectly. Violent computer games not only stimulate violent thoughts and feelings, but also provoke aggressive and antisocial behaviors [14], [15].

4. CONTROLLING STRATEGIES

Ethics in information technology can be trained to influence the individuals. Given that there is no mandatory syllabus for students in bachelors and master and PhD course on ethical issues in information technology, such a program seems essential to cope with the ethical challenges of IT. Previous investigations also prove this claim

In some cases, gender has a significant impact on the ethics of information technology, which can be due to local traditions, beliefs and cultural factors in Islamic countries. From a traditional and cultural point of view, women are expected to have different values than men; therefore, they have different moral behavior compared to men in different conditions. As women are expected to follow cultural and family values and obey tough constraints.

In terms of intellectual property, the results showed that the policies of Internet Service Providers (ISPs) and, in general, the Internet and domestic policies in some countries, such as Iran, are different than other countries. In Iran, strict software policies are not enforced, and individuals can download software and related items freely, while these policies are strict in some countries and people cannot access these data easily. Also the effective codes of ethics as well as correct policies should also be considered.

Two points of view can be considered for copyrights; the first point is that copyrights are incentives for creative production. The second point is that copyright is considered as a commodity for the consumer, who seeks to use it for free or at a negligible cost. Using this argument, it can be concluded that developed countries are struggling to secure the first view to have the copyright of their own works; on the other hand, in developing countries there is an attempt to reach a second view to have access to the copyright easier and at a lower cost.The copyright is not tobe respected as well, and individuals have free access to software and some other copyrighted works free of charge. This challenge also requires growth, education and cultural developments. Also, the infrastructures ness to be corrected and punishments should be considered for the violation of copyright.

There are no significant differences regarding privacy issues at different points as well as gender which indicate that privacy is a concern for all individuals. The results of this study also confirm this issue. Of course, the study also shows that female students are more concerned about their privacy. IT professionals or computer and IT students, considering that they have more information on this subject, are more likely to respect privacy-related issues, which also refers to the training of individuals. In order to discuss the privacy of access to data, IT strategies, infrastructures and platform must be properly defined and implemented.

In this section a set of strategies and training for controlling unethical activities in the field of information technology are presented. It is hoped that considering these strategies and trainings the ethical and social issues will be respected in the field of information technology and their challenges are reduced.

- Addiction to social networks, cyberspace and computers:
    - To create real and effective recreation and entertainment instead of virtual entertainments for students.
    - To reduce addiction to social networks, cyberspace and computers at night, the false policies of some companies should be eliminated. For example the lower cost of the Internet at night should be eliminated by these companies and instead of free download anight, this feature is provided during the day at a lower cost rather than the night.
- Family control and monitoring can also be an effective factor in this regard.
- Addiction to online unethical sites:
    - The most important and effective way to reduce addiction to unethical sites is to educate people about the dangers of addiction to it. If people become aware of the consequences and risks of being exposed to online unethical sites, the likelihood of such addiction is reduced significantly.
    - There are conditions for non-access to such websites. The filtering rule is an example of such conditions which is unfortunately not very successful.
- Addiction to violent computer games:
    - Creating recreational activities, such as creating diverse sports halls, green spaces and parks, etc., is an appropriate solution to fill the students' leisure time or their lack of access to such games.
    - Cultural development on the use of such games so that the hours spent on the computer games is limited.
    - Localization of computer games, which means the production and presentation of domestic computer games rather than the supply of games by the other countries. This solution can be effective due to the match between the computer games and the culture and beliefs of the country of residence.
- Secularization, anti-religious propaganda and blasphemy:
    - Informing people and teaching religious issues
    - Confronting superstitions
    - More monitoring and regulation and adopting stricter rules
- Verbal attacks:
    - Non-imposition of beliefs: If people impose their opinions on a person in the real world, with respect to freedom of speech the oppressed person may fight with these beliefs as verbal attacks.
    - Lack of bias: Excessive bias may cause abnormalities among people in cyberspace. Individuals in cyberspace must also respect each other's ideas and avoid bias in their thoughts. "Whoever disagrees with your thoughts is not your enemy!"
- Online theft and Copyright violation:
    - Establishing state-specific rules: Unfortunately, copyrights are not respected as they should. In this regard, the government must enforce strict rules and even take heavy fines from offenders.
    - Crimes shall be considered for sources that allow illegal downloading or other online thefts.
    - Cultural development; the necessary trainings are needed to raise the level of community culture in this field.
- Negative behavioral and personality impacts:
    - Families' education and attention: Families' education and attention to their children from childhood play an important role in reducing the negative effects of behavior and personality.

In general, it is recommended to promote awareness of ICT ethics among students and individuals. To achieve this, a moral framework must be created and developed. In addition, in order to promote ethics, universities, as well as schools, must actively develop ethical education in their curriculum to increase ethical awareness among students as the future representatives in the IT market.

5. CONCLUSION AND FUTURE WORK

In this study the ethical and social issues in the field of information technology are discussed. According to the students' opinion, antireligious propaganda had the highest prevalence in cyberspace among the indices that With Informing people, teaching religious issues, more monitoring and determines the correct rules it can be reduced. Also hacking was also ranked in the last place. It can be concluded that ethics in information technology can be trained. Therefore, mandatory syllabus for students in bachelors and master and PhD course on ethical issues in information technology seems essential to cope with the ethical challenges of IT. Finally, a set of strategies and training for controlling unethical activities in the field of information technology was presented with the hope that their challenges are reduced.

As noted earlier, this study has studied public awareness of some ethical issues in information technology among students, but the age related issues have not been addressed. Further research can consider on cultural differences, the gender based conditions, intellectual property rights and also user privacy behaviors in social network.

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Digitalization of Education

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Abstract: Education is the fundamental right of every human being. It is the basic need for survival in this competitive world. The current trend of Digitalization of education made it possible for every human being whether staying in rural areas or urban areas or even in very remote areas to satisfy this basic need. It is the digital education which makes it possible to spread the knowledge and learning everywhere with the help of different online modes. In India majority of people remain isolated from taking higher education due to some problems like they have to join some job at early age due to the poor financial condition of the family, some other family problems like early marriage or due to some other issues like geographical barriers etc. Digitalization of education acts as a catalyst for enhancing education among masses. Digitalization of education in education has been introduced with the four main rationales i.e. Social, Vocational, Catalytic and Pedagogical. Under Digitalization of education, education can be classified in three main categories as E-learning, Blended Learning, and Distance Learning. Digitalization of Education provides benefits to various students, teachers and Government.

Keywords: Digitalization of education, Education, Learners

1. INTRODUCTION

Education is the fundamental right of every human being. It is the basic need for survival in this competitive world. The current trend of Digitalization of education made it possible for every human being whether staying in rural areas or urban areas or even in very remote areas to satisfy this basic need. It is the digital education which makes it possible to spread the knowledge and learning everywhere with the help of different online modes. Digitalization of education acts as a catalyst for enhancing education among masses. It is that resource which can be used with an ease to connect academicians and the students through some online mediums like radio, telephone or internet. In India majority of people remain isolated from taking higher education due to some problems like they have to join some job at early age due to the poor financial condition of the family, some other family problems like early marriage or due to some other issues like geographical barriers etc. When we talk about democracy then it should also be implemented in terms of education. In other words the slogan of 'education for all' can really become a success only when it will reach to all and this is what the digitalization of education is actually doing. Digitalization of education acts as such a tool which made it possible for masses in assessing higher education by providing them knowledge and education at those places where they can assess it as per their convenience and according to the time suitable for them.

2. RESEARCH METHODOLOGY

This paper is based on descriptive qualitative research. The data for this paper has been collected through the experience and observations.

3. OBJECTIVES OF THE STUDY

- To discuss the rationale of digitalization of education in education
- To know the classification of digitalization of education in education
- To find out benefits of digitalization of education in education

4. MEANING

Digitalization of education means teaching and learning by using innovative digital tools and technologies. It is also called as Technology Enhanced Learning or e-learning. Digital learning helps the persons engaged in education by providing them the opportunities for teaching by using various modes of digital technologies. It can be blended or fuogrammes.d prourses anlly online

5. RATIONALE OF DIGITALIZATION OF EDUCATION IN EDUCATION

Digitalization of education in education has been introduced with the four main rationales i.e. Social, vocational, catalytic and pedagogical. As far as social rationale is concerned, the basis for introduction of digitalization of education is the perceived role that technology now plays in society and the need for familiarizing students with technology. For the purpose of vocational the basis is preparing students for jobs that require skills in technology. In the same manner catalytic rationale is Utility of technology to improve performance and effectiveness in teaching, management and many other social activities. The fourth rationale is pedagogical which gives the basis as to utilize technology in enhancing learning, flexibility and efficiency in curriculum delivery.

6. CLASSIFICATION OF DIGITALIZATION OF EDUCATION IN EDUCATION

Under digitalization of education, education can be classified in three main categories:

- E-learning
- Blended Learning, and
- Distance Learning

E-Learning The full form of E-Learning is Electronic learning. It is also termed as online learning. Under this method learning is done through computers. It is commonly associated with the field of advanced learning technology (ALT), which deals with both the technologies and associated methodologies in learning using networked and/or multimedia technologies. It is possible to leverage the online environment to facilitate teaching techniques like role-play across time and distance. The components include e-portfolios, cyber infrastructures, digital libraries and online learning object repositories. It can also facilitate the development of scenarios, which can be rarely witnessed in practice. E-learning facilitates the learners by overcoming the geographical and time barriers. The education can be attained by the people at ease while keeping the perfect balancing of family and work life.

Blended Learning When we make a mixture of the different methods of learning i.e. face to face learning, self paced learning and online classrooms then it will be termed as blended learning. Face to face is the traditional form of learning which is mostly followed in our education system. It comprises a group of students sitting in a class in which the faculty member gives the lecture to the students and also clarify their doubts face to face in a classroom. Face to face learning can take place in the form of lectures, seminars, conferences, presentations etc.

Self paced Learning provides the flexibility to learn according to the availability of learners' own time and pace, it occurs in a variety of ways such as : reading specific chapters from text book, studying course material presented through web-based or CD based course, attending pre-recorded classes or sessions, reading articles referred by faculty member, working on assignments & projects, and searching & browsing the internet.

Under Online Collaborative learning system both the faculty member and the learner interact with each other through internet either through Synchronous interaction or Asynchronous interaction. Under the first system both the learner and the faculty member can interact with each other and also to the other learners online at the same time. It generally takes place in the form of virtual classrooms or chat rooms. In the second method of collaborative learning the interaction can be done according to the convenience of the learner like interacting through e mail.

7. DISTANCE LEARNING

It is a type of open learning platform where the learners study at their own via computer- based communication, instant messaging, chat rooms, video conferencing etc. Mostly computer based training system is adopted for providing distance education. Digital libraries are also created by Digitalization of Education for providing the facilities of digital library in order to provide the access to the academicians and learners all the course material at all places and at any time. Researchers also are benefitted with the research material available online through the digital libraries created by Digitalization of Education.

8. BENEFITS OF DIGITALIZATION OF EDUCATION

Digitalization of Education provides benefits to various stakeholders viz, students, teachers and Government. These benefits can be discussed as below:

Benefits to Students

- Easy Accessibility- The education system is made easily available through Digitalization of Education. Online library, videoconferencing, e-mails, chat rooms all have made the education material easily available to the students by reducing the geographical barriers.
- Flexibility of content and delivery- The contents which are available online can be modified by the faculty as per the requirements of the time. Digitalization of Education also helps in relieving the constraint related to time. As the people can access the resources as per their time convenience.
- No loss of employment- Nobody have to leave his occupation as open learning system is available in which learner can join the course even if being employed somewhere.
- Enhanced Education Quality- Digitalization of Education N helped in providing high quality education which is also cost effective through new ways of interaction.
- Up gradation of skills- Learners who are already in employment somewhere can also learn new skills by continuing their studies even without leaving their jobs . This additional learning enhances their productivity as well.

Benefits to Employers

- Less cost of training of employees- As employees themselves join the courses for their up gradation, it reduces the cost of training to be provided by the employer.
- Increase the capacity and cost effectiveness of education and training systems,
- To reach target groups with limited access to conventional education and training- Those areas which are difficult to reach through conventional learning methods can also be provided with the appropriate education and training through online modes
- To support and enhance the quality and relevance of existing educational structures- Digitalization of Education

also provides in removing various flaws of existing educational system.

- Benefits to Government
- To ensure the connection of educational institutions and curricula to the emerging networks and information resources,
- To promote innovation and opportunities for lifelong learning.

9. CONCLUSION

Digitalization of Education acts as a catalyst for enhancing education among masses. It is that resource which can be used with an ease to connect academicians and the students through some online mediums like radio, telephone or internet. In India majority of people remain isolated from taking higher education due to some problems like they have to join some job at early age due to the poor financial condition of the family, some other family problems like early marriage or due to some other issues like geographical barriers etc. Digitalization of Education in education has been introduced with the four main rationales I.E. Social, Vocational, Catalytic and Pedagogical. Under Digitalization of Education, education can be classified in three main categories as E-learning, Blended Learning, and Distance Learning. Digitalization of Education provides benefits to various students, teachers and Government.

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Digital Entrepreneurship: Need of the Era

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Abstract: Digital entrepreneurship is a concept that determines how entrepreneurship can evolve, as digital technology continues to disrupt business and society. Digital entrepreneurship illustrates trends in the practice, philosophy, and education of entrepreneurs.As the business world becomes more digital, the idea of digital entrepreneurship explains the new processes that entrepreneurs use. This encompasses product designs, cost savings, ad targeting, opportunities for cooperation, promotions, conversions, and advantages over competition from industry.This paper highlights the concept, role, importance, pillars and problems before digital entrepreneurship and suggest the way how it can be harnessed in effective way.

Keywords: Digital Entrepreneurship, Digital articrafts, Digital platforms, Digital Infrastructure, Digital Skills

1. INTRODUCTION

Digital Entrepreneurship is generally characterized as the development of new projects and the transformation of existing ones.Through the development of new digital technologies and/or the novel use of such technologies by companies, (Commission of Europe, 2015). Digital entrepreneurship has been considered to be a crucial pillar for Many countries, including the Member States, have undergone economic growth, job creation and innovation.The Union of Europe. We argue that the digital entrepreneurial potential of a nation relies largely on digitalEntrepreneurial behaviour, community and policies and a welcoming environment of innovation inGovernments, industry, sector, institutions of education and NGOs (non-governmental organisations) interactions.

Both new projects and the transformation of established companies include digital entrepreneurship.Digital entrepreneurship foster economic and/or social value through the production and use of emerging digital technologies. Virtual Companies are characterized by the high intensity of the use of novel digital technologies (particularly social, large digital technologies, data, mobile and cloud solutions) to enhance business activities, invent and sharpen new business models.

2. DIGITAL ENTREPRENEURSHIP INCLUDES

- Fresh avenues for entrepreneurial companies to find clients.
- Fresh ways of developing goods and services and selling them.
- Fresh methods of revenue generation and cost reduction.
- Fresh opportunities for networks and collaborators to collaborate.
- New potential, risk, and competitive advantage sources.

3. OBJECTIVES OF THE STUDY

- To know about the concept of digital entrepreneurship
- To understand the benefits of digital entrepreneurship
- To understand the basic elements of digital entrepreneurship
- To know about the pillars of digital entrepreneurship
- To understand the way how to harness the digital entrepreneurship

4. RESEARCH METHODOLOGY

This study is based on the secondary information and the data has been gathered through various secondary sources which includes research journals, articles &blogs of renowned scholars and other internet sources.

5. DISCUSSION

Digital entrepreneurship opens up new opportunities on a realistic level for someone dreaming about being an entrepreneur. Some possibilities are more technical, but for someone who learns the basic skills of digital entrepreneurship, many others are within reach. Such basic skills include searching online for potential clients, prototyping new business ideas, and improving data-based business ideas.

Digital entrepreneurship unlocks new opportunities in terms of education to educate the next generation of entrepreneurs. 'Doing it' is the perfect way to practice entrepreneurship and draw on the learning. In the normal world, starting a new company, or releasing a new product, is costly and risky for beginners. Not only does the digital world reduce the hurdles to beginning something new, but it provides a range of routes to success. Educationally, it's such a different environment from case studies, simulations, and business plans.

Customers shop online much more frequently than they go to physical shops, unlike at any point in the past. Consequently, most enterprises are going online. There are a wide variety of

advantages that an entrepreneur can expect to gain when bringing a company online, in addition to keeping their companies running.

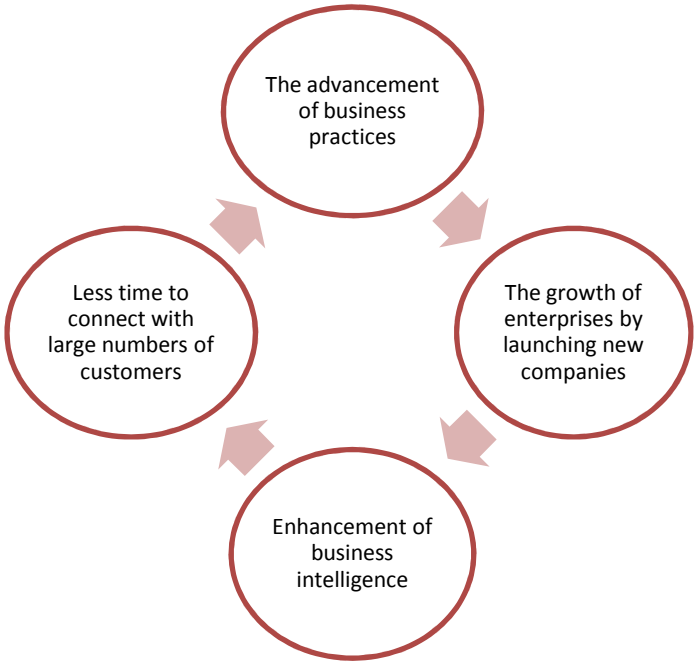
Business owners can take advantage of marketing automation, technological integration, analytics, brand recognition creation, cost savings, and a host of other features of conventional business management that are either difficult to sustain or not accessible at all through digital entrepreneurship practices.

The response to written material, marketing emails, social media presence, promotional events, consumer conversions, and much more can now be tracked and evaluated by companies, all from a well-organized business hub.

In addition to enhancing client-related processes, company owners are now able to take advantage of learning management systems by bringing their businesses online. Training courses, employee progress, certifications, incentives, and any other element associated with staff management can be created and handled by entrepreneurs.

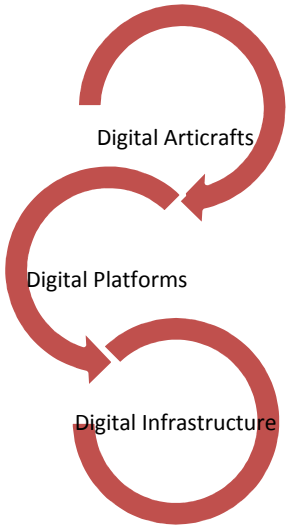
6. BENEFITS OF DIGITAL BUSINESS

Some of the benefits of digital business includes:-



Digital business is to help you attract new traffic, leads and sales for your company by reaching individuals who are searching for your products and services. Web marketing itself is the method of marketing your business to prospective leaders and high-value customers online.In helping your company expand, online marketing plays a vital role. There are plenty of ways to meet people who are interested in your brand, given that over 4.3 billion people are on the web and two billion of them are online shoppers.

7. BASIC ELEMENTS OF DIGITAL ENTREPRENEURSHIP



8. DIGITAL ARTICRAFTS

A digital articraft is a digital feature, application or material in the media that is considered to be part of a new product or service thatIn exchange, bringing value to the end user (Ekbia, 2009; Kallinikos, Aaltonen, &Marton, 2013). The inclusion of a few physical featurescan be applied to these articles from their associated objects and transformed into useful goods and services (Lusch&Nambisan, 2015) and offers several opportunities for entrepreneurs in several sectors as well. One cannot see these digital articrafts only on smartphones and other private devices (such as smart watch applications, fitness watches, etc.) but also as part of the house, equipment, toys, suits, shoes etc.Such articrafts can be independent software/hardware components or can be an object that works with the assistance of a digital network.

9. DIGITAL PLATFORMS

Digital platform may be described as the sum total of a place for information, products or services to be exchanged between producers and consumers, as well as the culture that interacts with that platform. It is important to recognize that the community itself is an essential aspect of the digital platform. The digital platform has very little intrinsic value without that community.

Digital platforms offer value to everyone within the platform's ecosystem while turning a profit through different business models for the company that developed it and manages it, such as: publicity, the subscriptions, charge as you go on your way, any combination of these and other strategies for profit-turning.

10. DIGITAL INFRASTRUCTURE

Digital infrastructure is the basic services that are essential for a country, region, city or organization's information technology capabilities. Digital technology is, by definition, central to a

modern nation's economy and quality of life.A Digital Infrastructure is characterized as digital technology tools and systems (e.g., cloud computing, data analytics, online technology).Communities, social media, 3D printing, digital market spaces, etc.) that connect, collaborate, and/or compute innovation and entrepreneurship maintenance expertise.

11. HOW TO HARNESS DIGITAL ENTREPRENEURSHIP?

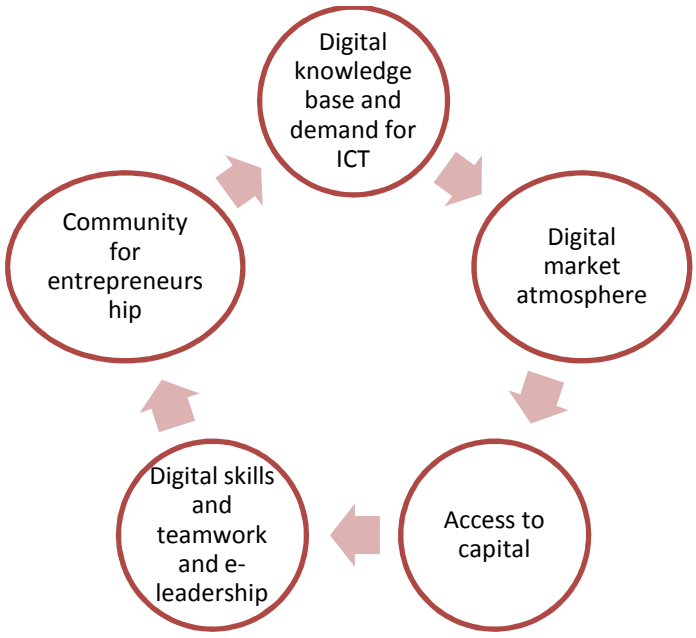
Business owners need to initiate and manage an array of various processes to make the most of digital entrepreneurship. Getting started could at first seem daunting, but once a company has moved online successfully, business processes can start to feel simpler.

Digital entrepreneurship can cover almost every aspect of running a company, so it is important for business owners to decide which programs they do and do not need in an attempt to make it easy and straightforward to implement a network of business functions.

Their marketing strategies are one factor that all transitioning businesses need to concentrate on. For businesses that are both new and developed online, digital entrepreneurship will work wonders. While switching from conventional to digital marketing can present its own set of challenges, with the aid of digital apps and software, managing and developing marketing campaigns takes a lot of the tension out of the equation.

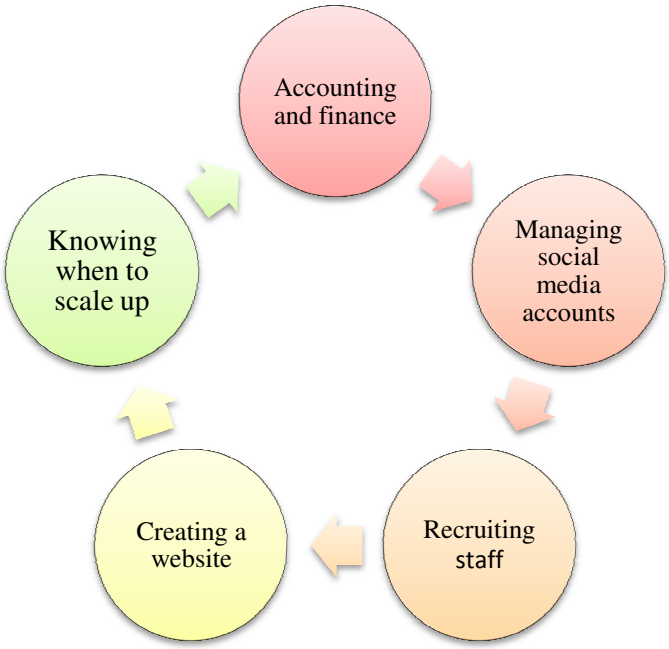
12. PILLARS OF DIGITAL ENTREPRENEURSHIP

Many research, as mentioned above, vary from conventional or general entrepreneurship in many aspects of digital entrepreneurship. Five elements were recognized by the European Commission (2013) as foundations of digital entrepreneurship inorder to analyse the principle of entrepreneurship, each aspect is associated with-



Five pillars of digital entrepreneurshipare digital knowledge base and demand for ICT, digital market atmosphere, access to capital, digital skills & teamwork and e-leadership and community for entrepreneurship.The technology of information and communication is also one of the technologies responsible for transmitting all forms of electronic knowledge from industries or enterprises. ICT is the primary method or technology used for automated processes entrepreneurially. It is possible to define the digital business environment as a virtual place in which one or more computer systems are used to record or save company data and interaction details of individuals. This can be achieved through digital social environments, often referred to as social networking sites that consist of a single central server for each and every customer to exchange information or data.It is very necessary for any entrepreneur to control the available funding to reduce financial risks. There are many formal and informal financial services offering financial assistance.Thus access to finance is another important element for digital entrepreneurship.For any person who wants to become an entrepreneur, there are several kinds of skills that are important. Among them, for example, the digital expertise is synonymous with digital entrepreneurship. Digital skills can be defined as the abilities of a person associated with them with digital technology being used.

13. PROBLEMS BEFORE DIGITAL ENTREPRENEURSHIP



14. CONCLUSION

As corporations have had to react to the negative impacts caused by a global pandemic, it should come as no surprise that digital entrepreneurship is on the rise. Companies around the world are absolutely reducing or giving up physical

locations and, as a result, they save money, keep consumers safe, and still provide the services they have done before.

Perhaps the fact that operating a company online means that businesses are better able to reach a far broader audience is an even greater advantage.Digitally-run companies will increase their sales by progressing in this way, decrease business expenditures, unify employees, boost brand recognition, and convert far more consumers than conventional business practices have allowed in the past.

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Ulip: An Effective Security and Investment Plan in India

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Abstract:

"ULIP: an effective and security investment plan in India" is a detailed study about the inception of the concept of Unit linked insurance policies and its working mechanism. The study is confined only to the analysis about the ULIPS and its effectiveness in comparison with the traditional policies and the Mutual funds.

Life insurance and building a respectable corpus are two goals that most of us set out to achieve early in life so that our dependents have enough to manage their lives. Gauging this general wish, insurance companies have devised several plans. Unit Linked Insurance Plan (ULIP) is one of them which has gained popularity over the past few years in contrast to the traditional endowment plans. Technological advancement has also played a role as now one can see all the available plans online, compare and buy the best suited.

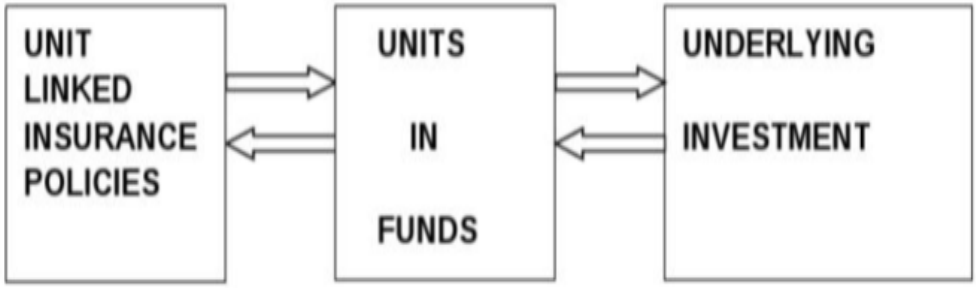
There, however, exist some fears in peoples' mind with regard to the possibility of decent returns in ULIPs because part of the premium money that insurance companies collect is put in a fund for insurance cover and the rest is invested in money markets, including share market which is unpredictable.

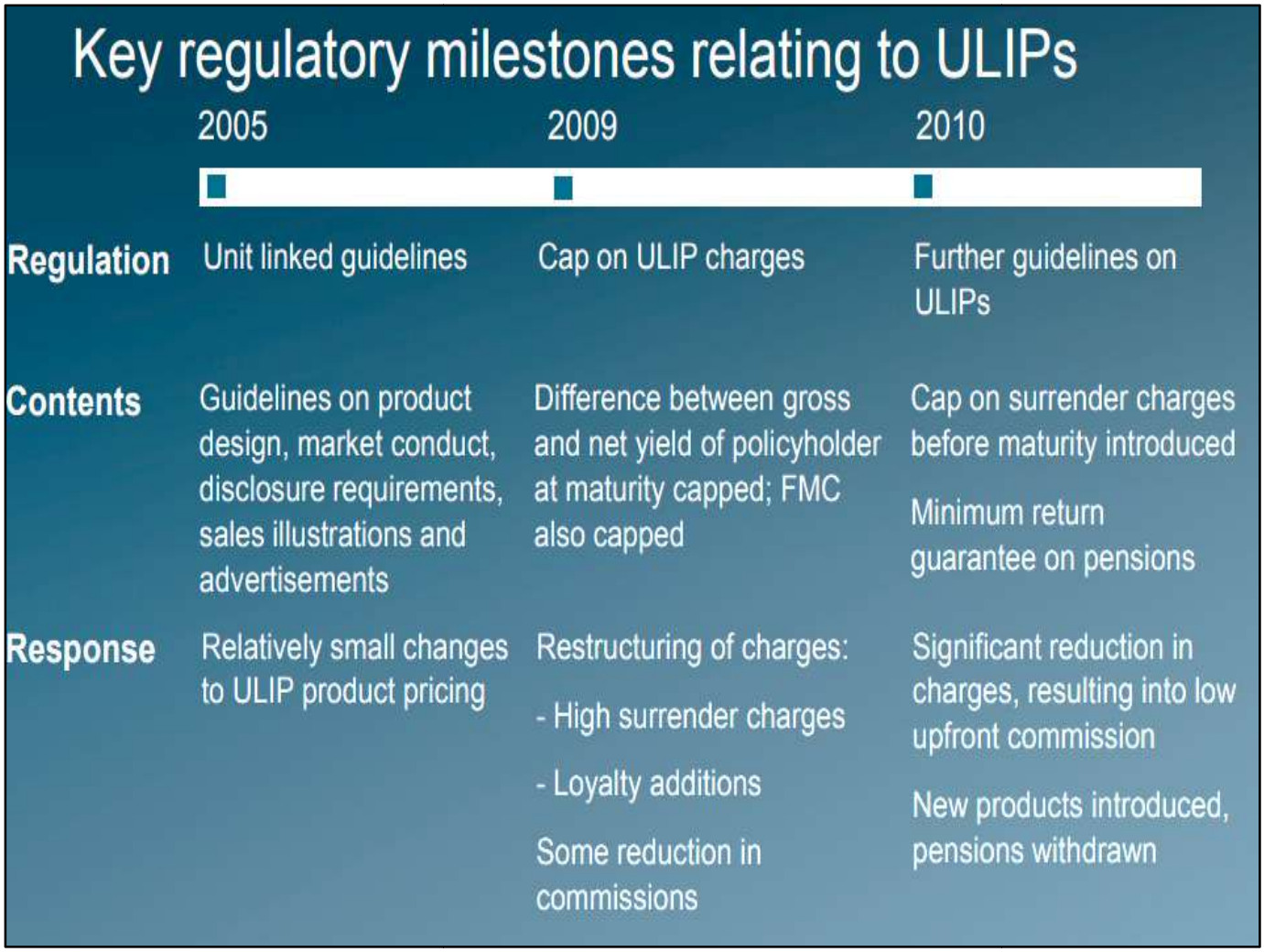
The concept of ULIP has been introduced for those who wish to avail a mix of both insurance cover and higher returns on investment. Although a substantial part of the premium money is invested in the money market, the companies have now developed expertise to insure that these investments don't become a victim of vagaries of the markets, and ULIP investors gain decent returns. Also, ULIPs are not as complex and expensive as they may sound. However, investors must understand that in order to expect decent returns, besides the life cover, they need to remain invested in ULIPs for a long time as insurance companies invest the premium money in different market instruments such as stocks and debt to ensure good returns.

1. INTRODUCTION

Unit Linked Insurance Policy (ULIP) is a category of goal-based financial solutions which combine the safety of insurance protection with wealth creation opportunities. Part of the investment made by a customer in ULIPs goes towards providing the insurance protection and residual portion is invested in a fund which in turn invests the money in stocks / bonds. The value of this part of the investment alters with the performance of the underlying fund opted by a customer. Thus, the protection element and savings element are distinguishable in ULIPs and they are managed as per the needs of the customer. ULIPs provide flexibility for the investors.

Growth Of Unit Linked Business In India: India has seen a tremendous growth ofUnit Linked Plans over the recent years. The growth has been fuelled by the Booming Stock Markets & Lower Interest Rates. Before the Introduction of The Unit Linked Product, the Prospects/Policyholders who are interested in investing in Stock Markets either had to purchase Stocks On their own in the Primary/Secondary or invest in Mutual Funds. With the introduction of the Unit Linked Product, the prospect has an option to invest in the Stock Market via Purchase Of A Unit Linked Life Insurance Policy. In addition to the Life Insurance Cover, a Unit Linked Policy Scores over Mutual Fund Via Tax Advantages And Life Cover(Now SIPScan Offer Life Cover As Per Recent SEBI Guidelines).





2. OBJECTIVES OF STUDY

- To study the concept and working mechanism of ULIPs
- To have an awareness of IRDA Guidelines with respect to ULIPs
- To review the impact on the ULIPs business after relaxation of regulatory by IRDA.
- To review the status of ULIPs in India and how it is different against other insurance plans abroad.

3. VARIOUS ULIP PLANS OFFERED IN THE MARKET

LIC's Unit Linked Plans

The Life Insurance Corporation of India currently offers one type of Unit Linked Plan which promises good returns through market linked growth and also the facility of life insurance coverage. Let us take a look at the insurance plan offered by the company in details.

LIC's New Endowment Plus Plan

A unit linked insurance plan which gives the dual benefit of capital appreciation and insurance protection. The plan has the following features and benefits.

The premiums under the plan have to be paid for the entire duration of the plan

The premiums paid net of charges are invested in a fund chosen by the policyholder as per his risk appetite. The company provides a choice of four funds to the policyholder to choose from. The funds available are:

- Bond Fund
- Secured Fund
- Balanced Fund
- Growth Fund

- For children aged less than 8 years, there is a deferment period. The risk cover will begin one day before the

completion of 2 years of the policy commencement or one day before the policy anniversary which coincides with or follows the completion of 8 years of age.

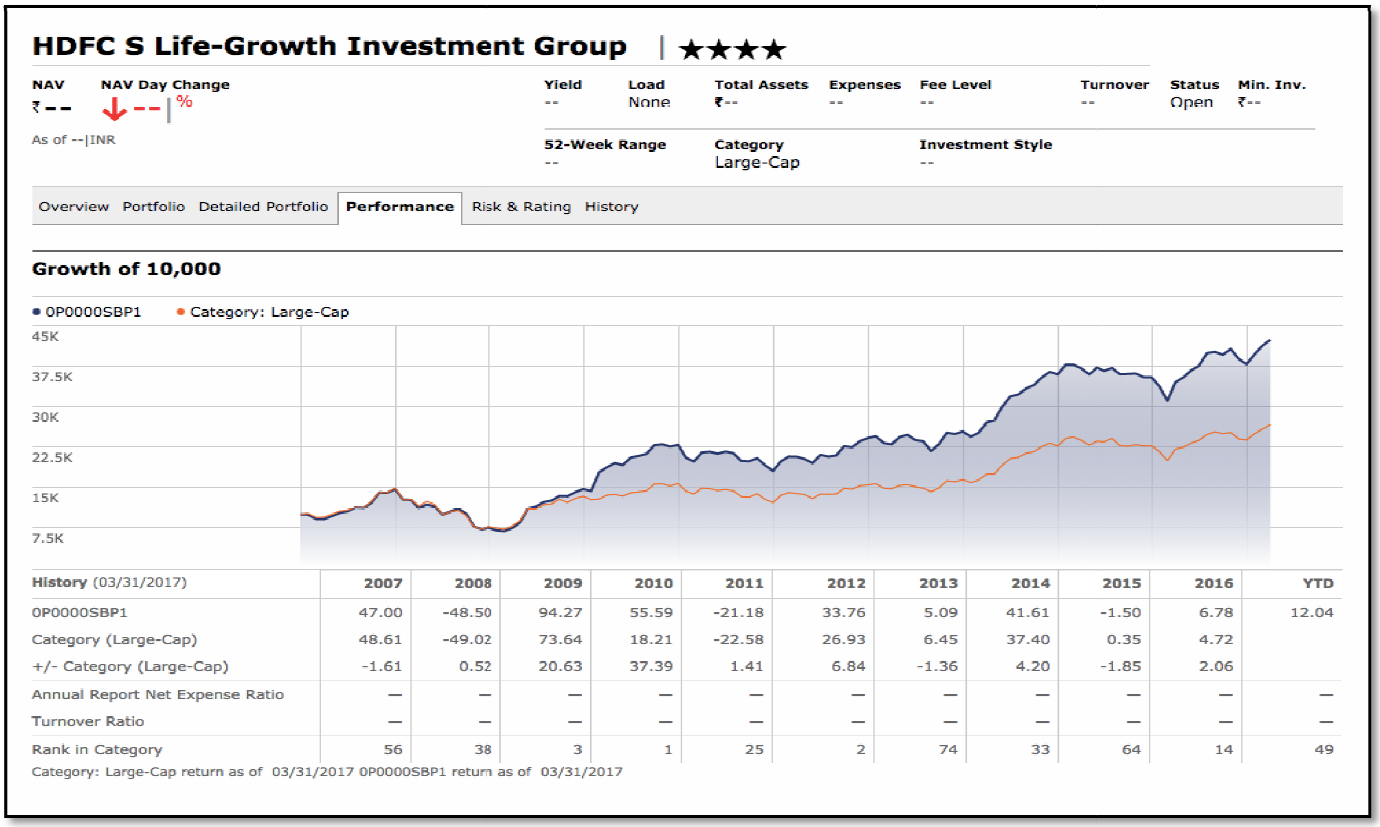
- The policy will vest in the name of the child who is the life assured and will then become the policyholder on the policy anniversary following the completion of 18 years of age
- In case of death of the insured during the deferment period, i.e. when the risk has not begun, only the available fund value is paid
- Partial withdrawals are allowed under the plan
- Switching is allowed to change from one fund to another. 4 free switches are allowed every year exceeding which a charge will be levied
- On maturity, the Fund Value is payable which can be taken as a lump sum or availed in instalments over a period of 5 years post maturity under the Settlement Option feature
- In case of death of the insured during the tenure of the plan and after the commencement of risk, higher of the Sum Assured or the available Fund Value is payable to the nominee
- LIC's Linked Accidental Death Benefit Rider can be availed under the plan which promises payment of an additional benefit in case the insured meets with an accidental death during the tenure of the plan

4. MAIN FEATURES OF ULIPS

- **Double benefits of I-I** With Insurance cover plus Investment (I-I) option, ULIPs not only protection throughout the policy term but also provide returns on investment portion at the time of maturity. An allocated amount from the overall premium is invested into a mix of equity and debt, helping investors to fulfil their long-term financial goals.
- **Triple (E-E-E) product** ULIP funds allow its customers the benefit of EEE (Exempt-Exempt-Exempt) mode. This means that the customers are eligible for tax deduction during the investment, earnings and withdrawal stage. The premiums paid can be claimed as deductions from the taxable income during the year subject to the provisions of the Income Tax Act. This means that the investment one makes into ULIPs is free of the tax burden. As opposed to the 10 percent long-term capital gains (LTCG) tax on earnings exceeding Rs 100, 000 from mutual funds as per the provisions of the Union Budget 2018, ULIPs customers do not have any tax on the income earned each year from the ULIPs they pay for. The final phase involves the withdrawal stage where the customers withdraw the earnings along with the money they had invested. The maturity amount earned or the sum assured disbursed in case of any mishap is again exempt from tax.
- **Top-up facility available** ULIPs also allow its customers to increase the amount of investment. This facility is called the top-up facility as the customers get to put an added amount over and above the existing policy. They can even avail tax benefits on these top-ups too. If the customers find that the fund they had originally paid for is performing well, they can put in surplus funds over and above the regular premium they had initially chosen to pay and, thereby, participate in the growth of the fund.
- **Switch facility** Switching option allows to change the ratio of invested amount where one can shift their funds from equity exposure to debt or hybrid fund as per the risk exposure at different life cycle phases. Not only this, investors risk appetite too decides how much of the allocated amount would be invested into equities, while the rest should get invested in debt instruments.ULIPs are the only financial instruments that give flexibility to the customer to safeguard their investments from market fluctuations by allowing them to move monies from equity to debt or vice-versa at any time. This facility is called 'switching' in Life Insurance parlance, where the customer can choose to switch partial or entire invested amount from one fund to another without any tax penalty. This unique feature is non-existent in mutual funds, additionally, there might be tax implications on moving monies before a certain time period.
- **Charges structure** There are around 5 charges involved in ULIPs - premium allocation charges, policy administration charge, mortality charge, fund management charge and surrender charge. In the initial days, the premium allocation charge would be high as it meets the insurer's costs related to marketing, underwriting, managing of funds etc. The administration charge is deducted on a monthly basis and is levied towards the maintenance of ULIPs. Mortality charge is the cost allocated to provide life insurance cover to the policy-holder. This is a variable charge and is greatly dependent on the mortality rate of the insured. Fund management charge is in the range of 0.5-2%, so this does not impact big time as the returns expected are quite higher.For a long-term ULIP, people should not bother about these charges as the kind of returns ULIP give in long-term should be able to recover all the charges borne in initial years. Moreover, earlier the charges of ULIPS were high but after new regulations by IRDAI, it stated that ULIPs will be capped at 3%, it is now quite easy for investors to invest their money as they will pay lower expenses and this will result in higher returns.
- **Lock-in Period** ULIPs mostly comes up with a minimum lock-in period of 5 years. This period can be increased further as per the policy terms and condition. The minimum lock-in period is 5 years for ULIPs. One may choose to discontinue completely and not opt to revive by paying premiums even within lock-in. However, in such cases, the accumulated corpus is moved to a discontinuance fund

which all insurers are mandated to keep and provide returns to the customer. The purpose of discontinuance fund is to hold one's money from the lapsed policy till the lock-in period is over.

GROWTH PATTERN OF VARIOUS LIFE INSURANCE COMPANIESON THE BASIS OF NAV



HDFC S Life-Growth Investment Group | ★★★★

NAV	NAV Day Change	Yield	Load	Total Assets	Expenses	Fee Level	Turnover	Status	Min. Inv.
₹--	-- | %	--	None	₹--	--	--	--	Open	₹--

As of --|INR

52-Week Range	Category	Investment Style
--	Large-Cap	--

Overview | Portfolio | Detailed Portfolio | **Performance** | Risk & Rating | History

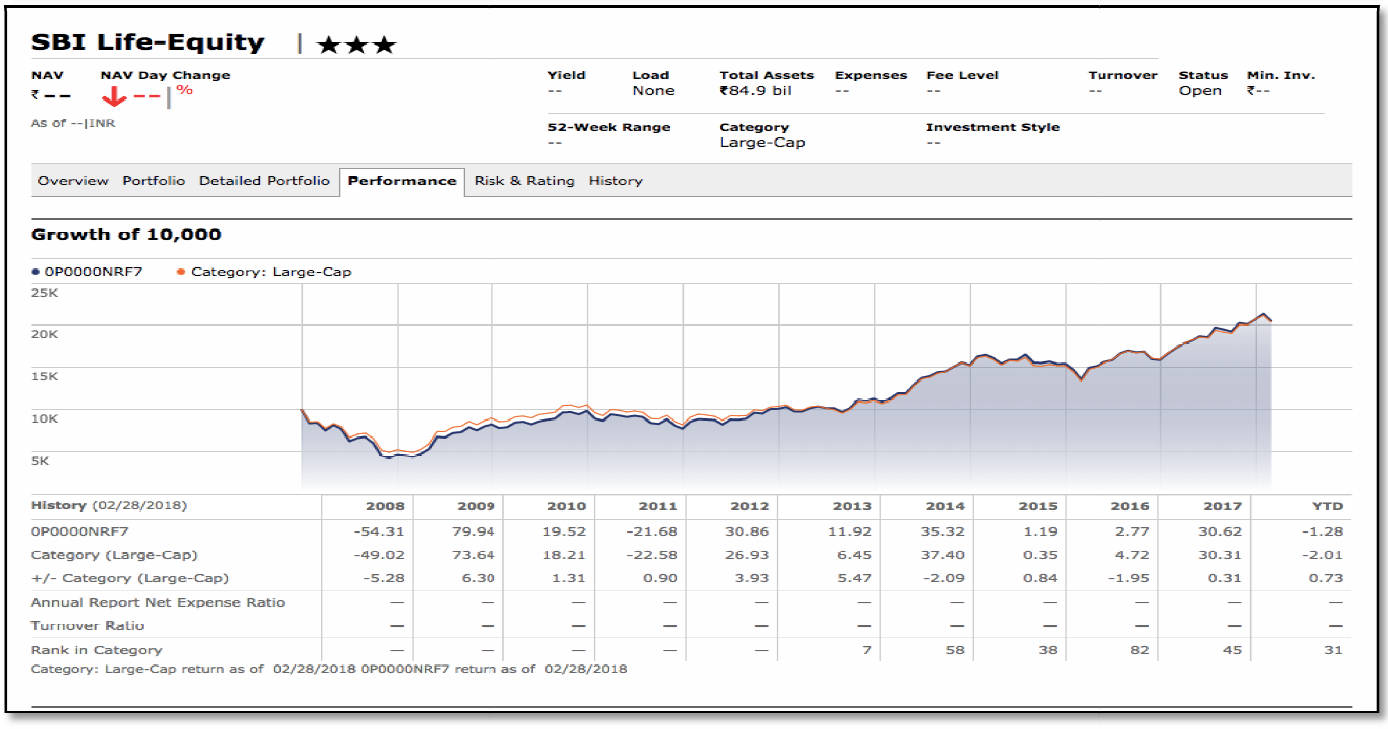
Growth of 10,000

● 0P0000SBP1 ● Category: Large-Cap

45K
37.5K
30K
22.5K
15K
7.5K

History (03/31/2017)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	YTD
0P0000SBP1	47.00	-48.50	94.27	55.59	-21.18	33.76	5.09	41.61	-1.50	6.78	12.04
Category (Large-Cap)	48.61	-49.02	73.64	18.21	-22.58	26.93	6.45	37.40	0.35	4.72	
+/- Category (Large-Cap)	-1.61	0.52	20.63	37.39	1.41	6.84	-1.36	4.20	-1.85	2.06	
Annual Report Net Expense Ratio	—	—	—	—	—	—	—	—	—	—	—
Turnover Ratio	—	—	—	—	—	—	—	—	—	—	—
Rank in Category	56	38	3	1	25	2	74	33	64	14	49

Category: Large-Cap return as of 03/31/2017 0P0000SBP1 return as of 03/31/2017



SBI Life-Equity | ★★★

NAV	NAV Day Change	Yield	Load	Total Assets	Expenses	Fee Level	Turnover	Status	Min. Inv.
₹--	-- | %	--	None	₹84.9 bil	--	--	--	Open	₹--

As of --|INR

52-Week Range	Category	Investment Style
--	Large-Cap	--

Overview | Portfolio | Detailed Portfolio | **Performance** | Risk & Rating | History

Growth of 10,000

● 0P0000NRF7 ● Category: Large-Cap

25K
20K
15K
10K
5K

History (02/28/2018)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD
0P0000NRF7	-54.31	79.94	19.52	-21.68	30.86	11.92	35.32	1.19	2.77	30.62	-1.28
Category (Large-Cap)	-49.02	73.64	18.21	-22.58	26.93	6.45	37.40	0.35	4.72	30.31	-2.01
+/- Category (Large-Cap)	-5.28	6.30	1.31	0.90	3.93	5.47	-2.09	0.84	-1.95	0.31	0.73
Annual Report Net Expense Ratio	—	—	—	—	—	—	—	—	—	—	—
Turnover Ratio	—	—	—	—	—	—	—	—	—	—	—
Rank in Category	—	—	—	—	—	7	58	38	82	45	31

Category: Large-Cap return as of 02/28/2018 0P0000NRF7 return as of 02/28/2018

ICICI Pru Life-Secure Save Guarantee | ★★

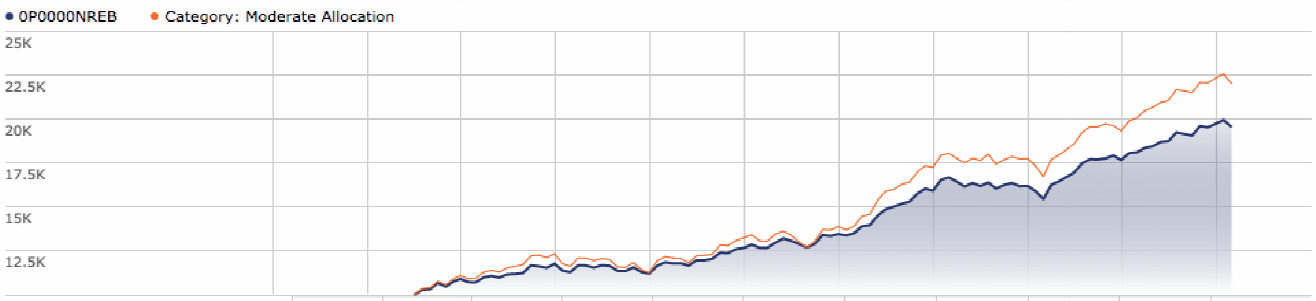
NAV	NAV Day Change	Yield	Load	Total Assets	Expenses	Fee Level	Turnover	Status	Min. Inv.
₹--	-- | %	--	None	₹107.6 mil	--	--	--	Open	₹--

As of --|INR

52-Week Range	Category	Investment Style	Credit Quality/Interest Rate Sensitivity
--	Moderate Allocation	--	--

Overview | Portfolio | Detailed Portfolio | **Performance** | Risk & Rating | History

Growth of 10,000



History (02/28/2018)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD
0P0000NREB			7.72	-4.75	13.06	6.17	18.28	1.72	9.10	11.66	-0.97
Category (Moderate Allocation)			10.84	-8.78	17.55	4.79	23.99	2.48	8.84	15.57	-1.45
+/- Category (Moderate Allocation)			-3.12	4.03	-4.49	1.39	-5.71	-0.76	0.27	-3.91	0.47
Annual Report Net Expense Ratio	—	—	—	—	—	—	—	—	—	—	—
Turnover Ratio	—	—	—	—	—	—	—	—	—	—	—
Rank in Category	—	—	94	7	94	26	91	82	47	88	24

Category: Moderate Allocation return as of 02/28/2018 0P0000NREB return as of 02/28/2018

Bajaj Allz Life-Equity Growth 2 | ★★★★★

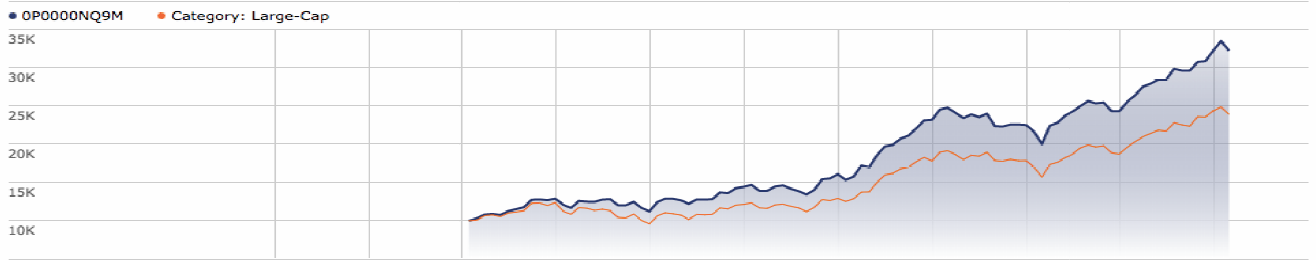
NAV	NAV Day Change	Yield	Load	Total Assets	Expenses	Fee Level	Turnover	Status	Min. Inv.
₹--	-- | %	--	None	₹14.9 bil	--	--	--	Open	₹--

As of --|INR

52-Week Range	Category	Investment Style
--	Large-Cap	--

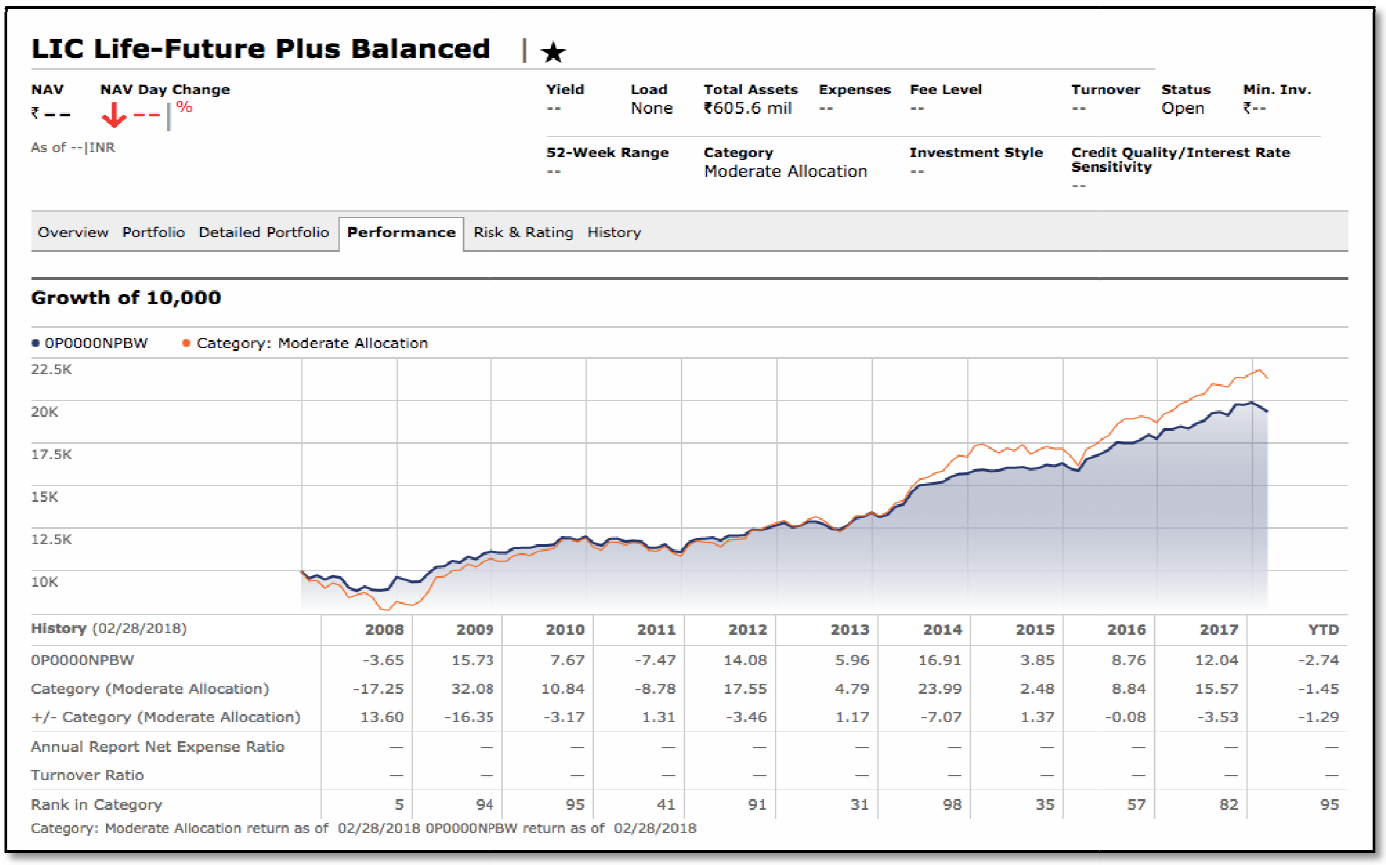
Overview | Portfolio | Detailed Portfolio | **Performance** | Risk & Rating | History

Growth of 10,000



History (02/28/2018)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD
0P0000NQ9M				-13.05	28.71	11.42	43.94	-2.89	7.97	32.56	-0.09
Category (Large-Cap)				-22.58	26.93	6.45	37.40	0.35	4.72	30.31	-2.01
+/- Category (Large-Cap)				9.53	1.78	4.97	6.53	-3.24	3.25	2.24	1.92
Annual Report Net Expense Ratio	—	—	—	—	—	—	—	—	—	—	—
Turnover Ratio	—	—	—	—	—	—	—	—	—	—	—
Rank in Category	—	—	—	3	34	9	19	73	6	28	2

Category: Large-Cap return as of 02/28/2018 0P0000NQ9M return as of 02/28/2018



SOURCE-http://www.morningstar.in/tools/insurance-fund-performance.aspx

5. CONCLUSION

ULIPs or Unit Linked Insurance Policies are gaining popularity in the recent times. Importance of ULIP policies has grown in the recent times because of the features and advantages that ULIP policies offer. While under traditional insurance policies, the relationship between premium and assured sum is fixed. But, under ULIPs there is freedom of flexibility in premiums and assured sum. The reason that is attributed to the wide spread popularity of ULIP is because of the transparency and the flexibility which it offers to the client. As time progressed the plans have also successfully mapped along with life insurance needs to retirement planning. In today's times ULIP provides solution for all needs of a client like insurance planning, financial planning for children's future and retirement planning.

If customer wants to take a low exposure to equity market and still get tax free returns, invest in ULIP but make sure that fund customer are invested is conservative fund. If one is not disciplined enough to make regular investments and need a whip to make invest, invest in ULIP.ULIP investors have the option of investing across various schemes similar to the ones found in the mutual funds domain, i.e. diversified equity funds, balanced funds and debt funds. Generally speaking, ULIPs can be termed as mutual fund schemes with an insurance component. ULIP investors also have the choice of investing in a lump sum (single premium) or using the conventional route, i.e. making premium payments on an annual, half-yearly, quarterly or monthly basis. In ULIPs, determining the premium paid is often the starting point for the investment activity.

ULIP investors also have the flexibility to alter the premium amounts during the policy's tenure. The freedom to modify premium payments at one's convenience clearly gives ULIP investors an edge over their mutual fund counterparts.

One can see that insurance is a better choice while making investment decisions because of features like tax savings, better returns and protection from any miss happening.

The following conclusions are made from the research study.

1. The introduction of Unit Linked Insurance Plan (ULIP) is a historic achievement in the life insurance services.
2. The ULIP policy right from its introduction in the market achieved staggering growth in a limited period of time.
3. Many life insurance companies' especially private life insurance companies are showing huge growth in the ULIP policies over traditional plans.

4. From the period 2007 to 2009 clearly showed all the companies including LIC achieved maximum growth in the ULIP policies over traditional policies.
5. ULIP policies are different to traditional policies as the investment of policyholders fund is not done in the traditional policies where as in ULIPs the investments are done by allocating a certain limit of percentage of policyholders fund in the market.
6. Comparing to traditional policies, the ULIP policies have risk factors. The policyholders can expect good returns from the ULIP over traditional policies but the market performance is highly influencing the ULIP performance.
7. Policyholders are preferring ULIP policy for long term returns.

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Edupreneurs Revolutionizing Edtech

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Abstract: In post liberalized India, we have seen various private entrants in all the sectors of the economy and education sector has also not been left behind. With that the trend of Edupreneurs has emerged to a great extent. These Edupreneurs has brought revolution in the education sector of India. The government has announced 100% FDI in education sector that has also contributed many folds in the advancement of Education Sector. This article explores and revolves around the concept of Edupreneurs and how Joining higher education and Edupreneurship has made the education more effective, efficient and flexible. The article also highlights the challenges faced by Edupreneurs in the Indian Economy.

Keywords: Edupreneur, Edupreneurship, Private Sector, Higher Education

1. INTRODUCTION

Literate and skillful people are the foundation of any economy. This creates the need for the evolution and advancement in the education sector to train the people for this competitive world. The word Edupreneur has come up with combining two common words- "Educator" and "Entrepreneur", which means a entrepreneur who is taking entry in the education sector. Edupreneur is someone who is served as an educator before organising a business related to education and has invested his/her skills, time, energy and capital for creating, developing and marketing a program, product, service, or technology to enhance learning.

Successful Edupreneurs invest time and efforts in understanding unique ways of teaching by developing their teaching skills, adult learning principles and to engage and retain their learners. Edupreneurs are the innovators that are producing changes in public system of education being developers or educators of education products and materials, providing tutoring services, consultants, education software suppliers, founders of schools, educational web portals and so on. No matter, what position these Edupreneurs have in Educational domain, they can create new and innovative organizations to make things possible.

Skills required by Edupreneurs to be successful

Know your Industry	Detailed study of various sub-sectors like preschool, coaching, tutoring, etc.
Learn from other players	Working with mentors for a few years
Marketing	To increase the brand value and attract good students and faculties who want to get associated.
Analyze cost, payback and ROI	Proper research on investment and return
Hiring good faculty	Good quality of education
Designing good curriculum and upgrading it	Helps in word-to-mouth publicity. Stay updated with new trends

2. EDUPRENEURS IN INDIA

With more than 250 million school going students in India, lakhs of government and private schools and over 1000 universities, India has become a hub for the Education Sector. With such an immense improvement in Education in India through the years, India's Education Sector has come up with great opportunities for aspiring businessmen, willing to flourish their lives as "Edupreneurs", or we can call as "Education Entrepreneurs".

After declaration of 100% FDI on Education Sector, it has been observed that some top-notch people have joined their hands for making India a literate country, which has opened up great potential and possibilities for everyone. These people or organisations called "Edupreneurs" have made getting Education more convenient and accessible.

Few of the leading Edupreneurs in India who has revolutionized the India's Education Sector are:

- **Byju Raveendran**- Founder of "Byju", a popular freemium learning app. The company is hoping to reach 1300 crore revenue mark next year.
- **Shantanu Prakash**- India's first Edupreneur, who founded "Educomp Solutions" in 1994 to digitalized schools using school labs. Last noted new worth of Shantanu Prakash is $920 million.
- **Roman Saini**- Founded "Un academy", an IAS officer, a motivational speaker and an Educator. He started Un academy to create an online edtech portal for helping civil services aspirants prepare for competitive exams.
- **Vamsi Krishna**- CEO and Co-founder of "Vedantu", an online tutoring company for online live sessions. He has also founded Lakshya Institute, a test preparation brand in North India. Vedantu's annual revenue is $2.7 million while Lakshya Institute's is $3.9 million.
- **Manjula Pooja Shroff**- Educationalist runs more than 40 institutions around western India and also a pre-school chain in UAE under the name "Blessing".

3. EDUPRENEURS IN HIGHER EDUCATION

The evolved Edupreneurs have started disrupting the lecture-based model of schooling and have offered more cost friendly, practical and engaged way of learning. Students are now offered educational opportunities through online web courses, study groups, digital apprenticeships, boot camps and all the different kinds of innovative teaching practices. The idea with which the Edupreneurs are working is to provide pedagogical expertise with advancement by offering innovative and fresh approach of teaching and learning.

The Indian Education System has always been a major contributor in the economy and has potential for more and steady growth. With the inclusion of private players, this sector is witnessing a significant growth.

- **Rise in Digital Apprenticeships** –Most people prefer learning through interactive and innovative teaching-learning approach rather than passively listening to lectures and cramming information.
- **Mentorship** – Edupreneurs are providing mentorship to their students by their own life experiences.
- **Educational Retreats** –This trend will be one of the fastest growing educational trends in next 5 years. Spending time in nature with other likeminded people is a powerful tool to get education.
- **Cheaper alternatives to university** – Various online courses provided by the Edupreneurs cost a fraction of cost and offer wide variety of courses.
- **The Future Is Bright For Lifelong Learners -** Our fast-evolving world demands a new generation of lifelong learners and Edupreneurs are providing a platform to get learning simultaneously with work.

The condition of both government and private institutions was wretched, as Education was only focused on mark- based achievement. With lack of infrastructure, resources and quality in Education the deserving candidates were restricted by monetary reasons. Edupreneurs has attempted to fill this void by imparting quality education at a nominal package. They are been trying to shift the perspective of Education from being bookish to holistic growth. To unearth the limitless potentiality of the students, the Edupreneurs have successfully provide optimal education by attracting talented faculty, implementing effective teaching methodologies and incorporating innovative teaching practices. The Edupreneurs have started changing the face of Higher Education and are continuously working towards it.

CHALLENGED FACED BY EDUPRENEURS

Many people has started looking Education as a, "Money making business" which has created obstacles in the way of these edupreneurs. Some of the challenges faced by them are:

- **Limited Sources of Funding**- The only sources of funding for these edupreneurs is donations because they are allowed to open up schools and colleges only as non-profit entity which restricts their sources of funds.
- **Lack of Trust**- Parents prefers admitting their children in already established well reputed institutions, instead of looking for the right type of Education offered.
- **Employing Wrong Human Resource**- Sometimes, these edupreneurs fails to hire right employees and that become a drawback for them.
- **Human Touch**- It is a challenge for Edupreneurs to create a perfect blend of technology and human touch. Education has become digital but people are still looking to find actual mentors.

4. CONCLUSION

Globally there are so many innovative things that are happening in every sector of Economy. The Growth of Education Sector has also been phenomenal throughout the world including India. The Government and private players has contributed immensely to the sector. The potential for growth of Edupreneurs in India is great. A fast growing economy like India requires a right supply of accountable and quality education. The networks of schools promoted by these entrepreneurs offer students a standardized curriculum at an affordable cost. This significantly fortifies the efforts of Edupreneurs through the faith of public authorities and government bodies. If the Government can make policies for the elimination of few challenges faced by the Edupreneurs, their growth potential can be unlimited. Any business doesn't gain success overnight. It's a collective effort of passion an

dedication followed by systematic planning and execution and this is also applicable on Edupreneurship.

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Data Mining Application and its Challenges

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Abstract: "You can have data without information, but you cannot get information without data" this statement seems to be so true that amount of data generated today is growing so exponentially due to large advancements going on in information technology field. Every field generate large volume of data which further provides us the opportunity to unlock the valuable information embedded within that treasure of data though it introduces some new challenges also. In this paper we will discuss the modern techniques of Data Mining and how they can be used to extract useful knowledge from a large dataset that surrounds us. Those that can use this technology and its techniques can extract large benefits and gain competitive advantage over their competitors. In the introduction we begin by what is data mining, why it is becoming popular, what are its application, what challenges it faces and what are the future trends. In other sections we will discuss data mining tasks, its resources and tools which automate the task of fetching useful information from it.

Keywords: Data mining, knowledge, application, challenges

1. INTRODUCTION

Data mining is a process that takes raw data as an input and outputs knowledge, discover patterns in a large data sets involving techniques like machine learning, artificial intelligence, statistics, pattern recognition and database systems. It involves effective tasks of data collection and warehousing as well as computer processing. If data has to be segmented and evaluated for finding the probability of future events, data mining uses advanced mathematical algorithms. It is also known as Knowledge Discovery in Data (KDD). Data mining process enable firms and different organizations to make deliberate decisions by fabricating, assembling, and scrutinizing and accessing volume dataset. To implement this smoothly it uses variety of tools query and reporting tools, decision support system tools and analytical processing tools.

By taking the help of data mining software to discover for patterns and the relationship between them in large clusters of data, businesses can come to know more about their customers and develop more implicit marketing strategies to increase sales and decrease costs. It mainly turns on efficient collection of data, procedure used to extract convenient data from massive collection of raw data. It further includes analyzing these data patterns using one or the other software's available. It has many applications in numerous fields, like medical, construction, telecom, and others. Because of these application businesses can come to know more about their customers preferences and which leads to development of more effective strategies related to their business upliftment and proper utilization of all the resources.

Data mining technique of predicting information from large pool of data is said to be a powerful technology with great opportunities to help companies to concentrate more on the essential information in their data warehouses. Data mining tools also helps to predict future scenarios, allowing them to take energetic, enlightenment decisions. Data mining tools will answer number of business questions that were otherwise very time consuming to solve. They polish databases for the patterns which are hidden and getting that important information that experts may miss because it lies outside their assumptions.

These techniques can be executed fastly on existing software and hardware platforms so that the value of existing resources get increased and they can be unified with new products and systems as they can implemented online. These techniques can be applied on high performance client server or parallel processing computers.

2. APPLICATIONS

Data Mining in Health Care

Health care institutes mostly lack the appropriate information systems to generate the reliable reports in comparison to other information than purely financial and mass related statements.

The delivery of healthcare has always been information driven, and there are pointers that the industry has started recognizing the increasing value of information processing in this new managed environment. Number of automated systems are used as a tool for performing daily work: they generally concentrate on daily registration tasks. All the collected has been used by the organization to keep running, operational data also been stored, in these automated systems. There is a growing demand to perform more on the data of an organization than to use them only for administration work. There is a lot of information present in the legacy systems. That information can be easily extracted. Most of the times this cannot be done directly from the systems because these are not made to answer or resolve such queries. Research [1] shows that (Zuckerman and Alan, 2006); Armoni, 2002; Rada, 2002) that successful decision systems enriched with analytical solutions are necessary for healthcare information systems. Treatment history of many patients are often stored, and computerized

and data processing techniques helps in answering number of important and important questions associated with health care. The role played by data mining is to provide useful information and decisions so that appropriate treatment and health care can be given to the patient.

With the help of data mining techniques causes, symptoms, course of treatment can be compared or contrasted so that we can deliver proper courses of treatment to the concerned patient effectively. It also helps management of health care to better recognize and track chronic disease states and high-risk patients, design appropriate interventions, and that decreases the number of hospital admissions and insurance claims.

Data mining in Education

The main aim of Indian Government is to promote education everywhere. They are concentrating more on quality not on quantity. As the numbers of universities are establishing, each and everyday millions of students are enrolling across the country. With huge increase in number of higher education aspirants, it is believed that data mining technology helps in bridging knowledge gap in higher educational systems. The hidden patterns, relationships, and irregularities that are discovered by data mining techniques from educational data can improve the decision-making processes in these systems. This further helps in improving and bring advantages like maximizing educational system efficiency, reducing student drop out cases, increasing student's retention and transition rate, increasing student learning outcome and reducing the cost of overall process.KDD process helps in improving the overall quality of education. The technique mainly being employed is decision tree which helps in effectively taking best solution to any question. Challenges of EDM are[2]:

- Educational data is incremental in nature
- Lack of Data Interoperability
- Possibility of Uncertainty
- Research Expertise Relation between Student-Teacher (5313ijdms04.pdf)

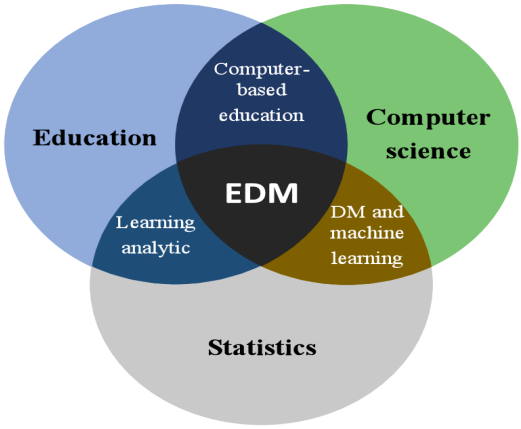

Fig 1. Main Areas in Educational Data Mining

Data Mining in Retail

The data that organizations gather about their customers proves to be one of the greatest assets of that business. Present deep in vast amount of data is the valuable information that could help business to make a significant difference to the way in which any business organization run their business and interact with their current and prospective customers and gaining the competitive edge on their competitors. But how can this happen the answer is Data Mining. It is an automated technique used to extract hidden or previously unknown pieces of information from large data set, using different conditions, which makes it possible to uncover the different patterns and relationships. This resultant derived information can be utilized in the decision support, prediction, forecasting and estimation to make important decisions, which further helps in giving a particular the competitive edge for business.

Data mining is neither a magic bullet nor a simple process and as such presents challenges that go well beyond the technical. Data mining is an enormously powerful tool that should be used with utmost care for increasing customer satisfaction, providing them secure, best, and useful products at reasonable and economical costs. Data mining methods together with electronic data interchange help number of organizations to track all the financial transaction. Data mining is also helping the E-Commerce industry to increase their productivity. By inculcating data mining techniques retailers are improving their inventory logistics.

Data Mining in Manufacturing

CRISP-DMTM Cross Industry Standard Process for Data Mining, SEMMA, SolEuNet Data Mining and Decision Support for Business Competitiveness: A European Virtual Enterprise, Kensington Enterprise Data Mining Imperial College, Department of Computing, London, UK, and Data Mining Group (DMG)[3] have been developed as an established methodologies and software tools for the standardization of industrial applications of data mining. CRISP-DM stands for Cross Industry Standard Process for data processing and may be a methodology created to shape data processing projects. It consists of 6 steps to implement a Data Mining project and they can have number of iterations according to developer's needs. Those steps are Business Understanding, Data Understanding, Data Preparation, Modelling, Evaluation, and Deployment. The SEMMA process was developed by the SAS Institute. The SEMMA stands for Sample, Explore, Modify, Model, Assess, and it also deals with conducting a data mining project[4]. The SAS Institute considers a cycle with 5 stages for the process which includes sample, explore, modify, model, and assess. It presents easy to understand process.

In context of manufacturing, data mining performs two main roles prediction and description. description. Descriptive data processing focuses on discovering interesting patterns to describe what the data consist of. Predictive data mining

focuses on predicting the behaviour of a model and determining future values of key variables based on existing information from available databases. It has been found that areas such as supply chain management, production planning and control, and integration of data mining system with existing system helps in extracting the useful information to take number of crucial decisions.

3. CHALLENGES IN DATA MINING APPLICATIONS

Some of these challenges' organizations encounter while implementing Data Mining is given below[5]:

Security and Social Challenges:

Decision-Making strategies are done through data collection-sharing, so it requires considerable security. Private information about individuals and sensitive information are collected for patrons profiles, user behaviour pattern understanding. Illegal access to information and therefore the confidential nature of data becoming a crucial issue.

User Adaptability:

The knowledge is discovered using data mining tools is useful only if it in the understandability of the user. From good visualization interpretation of data, mining results can be eased and helps better understand their requirements. To obtain good visualization much research is carried out for big data sets that display and manipulate mined knowledge.

(i) Mining supported Level of Abstraction: Data processing process must be collaborative because it allows users to consider pattern finding, presenting, and optimizing request for the data processing supported returned results.

(ii) Integration of Background Knowledge: Previous information could also be wont to express discovered patterns to direct the exploration processes and to precise discovered patterns.

Challenges in implementing Mining methods:

These challenges are associated with a processing approaches and their limitations. Mining approaches that cause the matter are:

(i) Versatility of the mining approaches,

(ii) Diversity of knowledge available,

(iii) Dimensionality of the domain,

(iv) Control and handling of noise in data, etc.

Different approaches may implement differently based upon data consideration. Some algorithms require noise-free data. Most data sets contain exceptions, invalid or incomplete information cause complication within the analysis process and a few cases compromise the precision of the results.

4. COMPLEX DATA TYPES:

Real-world data is heterogeneous, and it might be multimedia data containing images, audio and video, complex data, temporal data, spatial data, statistic, tongue text etc. it's difficult to handle these various sorts of data and extract thespecified information. New tools and methodologies are developing to extract relevant information.

(i) Complex data types: The database can include complex data elements, objects with graphical data, spatial data, and temporal data. Mining of these sorts of data isn't practical to be done one device.

(ii) Mining from Varied Sources: the info is gathered from different sources on Network. the info source could also be of various kinds counting on how they're stored like structured, semi-structured or unstructured.

5. PERFORMANCE ISSUES:

The performance of the data mining system depends on the efficiency of algorithms and techniques are using. The algorithms and techniques designed are not up to the mark lead to affect the performance of the data mining process.

(i) Efficiency and Scalability of the Algorithms: The data mining algorithm must be efficient and scalable to extract information from huge amounts of data in the database.

(ii) Improvement of Mining Algorithms: Factors such as the enormous size of the database, the entire data flow and the difficulty of data mining approaches inspire the creation of parallel & distributed data mining algorithms.

The research challenges on the other hand are arranged into five categories[6][7]:

a) improving the scalability of data mining algorithms: Most data mining algorithms today assume that the data fits into memory. Although success on large data sets is often claimed, usually this is the result of sampling large data sets until they fit into memory.

b) Mining non-vector data: Today, most data mining algorithms work with with vector-valued data. It is an important challenge to extend data mining algorithms to work with other data types, including 1) time series and process data, 2) unstructured data, such as text, 3) semi-structured data, such as HTML and XML documents, 4) multi-media and collaborative data, 5) hierarchical and multi-scale data, and 6) and collection-valued data.

c) Mining Distributed Data: Today most data mining algorithms require bringing all together data to be mined in a single, centralized data warehouse. A fundamental challenge is to develop distributed versions of data mining algorithms so that data mining can be done while leaving some of the data in place.

d) Improving the ease of use of data mining systems and environments: Some of the data in place. In addition,

appropriate protocols, languages, and network services are remain so. On the other hand, a fundamental challenge is to develop data mining systems which are easier to use, even by casual users.

6. CONCLUSION AND FUTURE SCOPE

In this paper we briefly discussed about the varied data processing applications. This review would be helpful to researchers to specialize in the varied problems with data processing. to realize such proliferation in data processing applications, we believe a uniform, risk adverse and predictable methodology is required. Today, variety of data Discovery and data processing (KDDM) process models are proposed in literature with the aim of providing structure, control, and standard methodology in applying data processing. KDDM process models outline the elemental steps (executed iteratively) in applying data processing covering the whole lifecycle from goal determination to deployment of the discovered knowledge [8][9]. Advances in data processing requires a) supporting single investigators working in data processing and therefore the underlying research domains supporting data processing; b) supporting inter-disciplinary and multi-disciplinary research groups performing on important basic and applied data mining problems; and c) supporting the acceptable testbeds for mining large, massive, and distributed data sets. Appropriate privacy and security models for data processing must be developed and implemented.

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Impact of Covid-19 on Education and the Role of Information and Communication Technology-A Review

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Abstract: ***As we know that there is a lot of information which has to be communicated from one to another with the help of communication technologies including the internet, wireless phones, and wireless networks, etc. Nowadays, especially in the corona pandemic, lots of people are able to continue with their work just because of these ICT technologies. The area in which a major effect of ICT can be felt is undoubtedly education. With the help of ICT, students are able to learn at home according to their convenience. In this paper, we will learn how ICT has revolutionized the way of teaching and the traditional practices of teaching.***

Keywords: ICT, education, teaching, computers, internet, covid-19

1. INTRODUCTION

When computers came into the education sector, they are not so popular as they are of limited use only.At that time, they are used especially for administrative purposes only. But as soon as communication technology like the internet came into existence, the new term ICT (Information and Communication Technology) has emerged and started changing the practices of traditional teaching by integrating these new ICT technologies with teaching methods.ICT includes the hardware and the software which can be used for information sharing and for communication purposes. This means any technological device whether computer, or laptop, or mobile phones, or servers, or television, etc. comes under the ICT umbrella. A very interesting feature of ICT is that it creates new ways of learning for students, teachers as well as academicians. If the teachers are well literate in digital technology they can make teaching fun for the students with the help of these ICT technologies. It makes teaching interesting and effective at the same time. Education is not just about teaching but also the way of imparting knowledge to others. The method of imparting knowledge to others should be such that the others person will receive it quickly and effortlessly. And. Here ICT comes to the rescue as it makes teaching methods very practical and easy to learn for everyone. When traditional teaching practices are integrated with ICT tools it helps in more participation and engagement of the students in the class as it helps them to learn with the help of a lot of activities. Thus, ICT helps not only in education process but also in the administration of the education. The figure 1 illustrates the effectiveness of ICT in education:

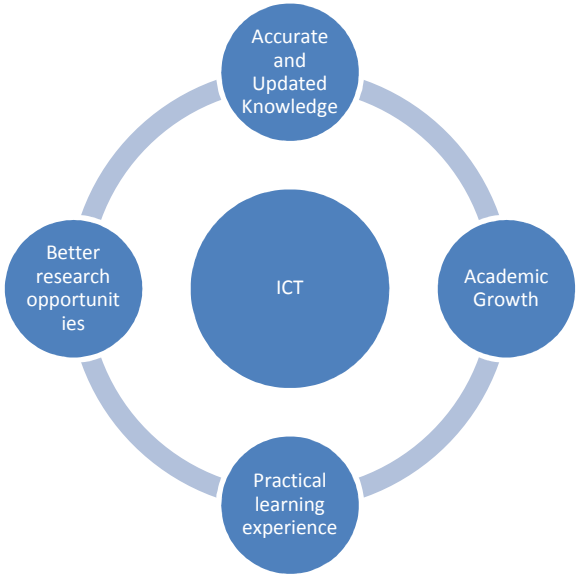

Fig. 1. Effectiveness of ICT in Education

2. SIGNIFICANCE OF ICT IN EDUCATION

1. Importance of ICT in the context of personnel

The importance of ICT in education is not just only for the students but also for the teachers, the counselors, the educational administrators and planners, the educational researchers and for the parents also.

For the students, it is just a revolution. Now, the students are not dependent only on teachers and library for knowledge but can learn anywhere and at any time they want to. They have free access to a vast amount of knowledge from various disciplines.

For teachers, ICT helps them in imparting the latest knowledge to the students as they have access to a lot of books, advanced journals, audio visual-aids, smart boards, LCD projectors, etc.

Not only this but they can also refine their teaching practices with the help of blended learning and easily monitor the progress of every single student in the class.

The counselors in the schools or college have to be in constant touch with their students and have to gather various kinds of information for the students. With the help of ICT tools, they can easily gather required information and can also maintain a record of the same. They can also measure whether parameters of a student like learning ability, special abilities, aptitude, etc. very easily with the help of such tools.

ICT is also a boon for the administrators as it helps them to have access to all the departments of the Institute, what the people there are doing, which person has completed his task, what are the shortcomings of each department, or what is left to be done. ICT helps the administrators to be connected with the whole organization just with one click. Thus, they can do a better administration of their organization and can make up better plans with the help of such tools.

The educational researchers can get a clear view of their research with the help of ICT tools. Now, they can know what research has already been done in their field already, what is left, what models have already been used for the research, how the data is collected for the research very easily. It also helps the new researchers can easily collect and process their data with the help of these tools.

The parents can also easily monitor their children's progress using ICT whether it is communicating with the teachers online or maintaining a record of their child's attendance. They can monitor the performance of their children very easily now.

2. Importance of ICT in the context of System of Education

a. Formal Education: Formal Education can be imparted through Smart Boards, Blended or Hybrid learning, or LCD etc. using ICT tools. Blended or Hybrid learning is a special type of learning in which traditional teaching methods and online teaching methods are blend together to give better teaching to the students.

b. Non-Formal Education: Non-Formal Education means Open Schools, Open Universities, Online Courses, Virtual Classes, etc. Before ICT tools, it was very difficult for students in Non-Formal Education to be in contact with schools and universities. But ICT tools made the overall process of Non-Formal education very flexible. Now it is very easy for the Open Schools and Universities to get students registered, to provide them study materials and to give them important information

c. In-Formal Education: In-Formal education is one when a person instead of having any formal or informal education learns by himself using the Internet, TV, YouTube, E-Books, e-paper, Blogs and other platforms. Such a facility is possible only by using ICT tools.

3. IMPACT OF COVID-19 ON EDUCATION

Among the many sectors which are affected by novel coronavirus education is one. Due to this schools and colleges are closed, classes are suspended and examinations were postponed. The following are the negative impacts of COVID-19 on Education:

a. Classes and Exams were hampered: Classes in all the schools and colleges have been suspended and exams were postponed. Due to lockdown in the country admission procedure was delayed and students suffered a loss of about nearly 3 months.

b. Impact on placement in Colleges and Universities: The recruitment process in companies and other sectors got postponed due to COVID-19. Due to this, the unemployment rate is also increased in the country. This pandemic hampered not only the recruitment process but the new employees also fear the withdrawal of their jobs from private sectors. The education level is also decreased because of unemployment as people now struggle for food rather than education.

c. Sudden transition from face to face learning to online learning: As due to lockdown there is a sudden transition from face to face learning to online learning, not all the teachers and students were prepared for it. Most of the teachers are using Zoom, Google meet, etc. for online learning which may not be real online learning without any dedicated online platform.

d. Removal of jobs and reduced employment opportunities: Due to novel coronavirus the pass out students found difficulty in getting new jobs overseas. Many Indians who were working outside may have to come back after losing their jobs. Thus, due to this the opportunities for fresh candidates also becomes less. The candidates who are recently posted in the private sector are also fearing of withdrawal of their jobs.

e. Burden on parents increased: Due to the closure of schools and colleges, the responsibility of the parents to educate their ward also increased.

f. Mid-day meal schemes in schools are shut: The government has started the mid-day meal scheme in government schools all over India to provide better nutrition to the students. It was also found that due to the mid-day meal scheme the enrolment in the schools was also increased.

g. Online education doesn't have a global reach: The students in rural areas or from poor families are still facing difficulties in using Online Education. Some students lack internet facilities or smartphones, or laptops, or computers, etc. Thus, the effect of COVID-19 on education increased the gap between rich and poor students.

h. **Effect on Schools and Colleges:**Due to COVID-19 many people lost their jobs or their salaries have been cut off. Due to this, the fees of private schools and colleges also got delayed.

4. ROLE OF ICT IN EDUCATION DURING COVID-19

As we have already discussed the negative impacts of COVID-19 on education, but it also gives some positive opportunities as the role of ICT is now emerging and Indian Education System is now slowly shifting from the traditional one to a new era.Here are some of the positive changes which ICT brought into the Education System:

a. **Focus is shifting towards Blended learning:** As we all know that Blended learning is the combination of traditional learning and online learning. Nowadays, the focus is shifting toward Blended learning where a teacher can teach multsiple students at a time, or give them assignment, or provide them with study material, or can take their problems, etc.

b. **Positive impact on Environment:** During novel coronavirus, it was not possible for the teachers to collect a hardcopy of the assignments from the students. So, the focus shifted from hardcopy assignments to softcopy assignments. Also, the students and teachers don't have to come to the Schools and Colleges using vehicles. As a result, paper wastage and environmental pollution were reduced drastically.

c. **Improvement in collaborative working:** The shift from Traditional learning to Blended learning using ICT tools results in collaborative work among students as well as teachers. Now, the teachers and students cooperate and help each other from all over the world using an online platform.

d. **Shift from traditional meetings to Online meetings:**Prior to Covid-19 traditional meetings were done in which the time availability of every person has to be checked, a place has to be finalized, etc. But now, due to ICT technologies, we can have virtual meetings, teleconferencing, webinars, etc.

e. **Rise in Digital Literacy:** Using ICT tools the ratio of Digital Literacy is also getting increased in India as people now are more and more using digital tools instead of traditional practices.

5. ROLE OF INDIAN GOVERNMENT IN ONLINE EDUCATION

The Ministry of Human Resource Development (MHRD) using ICT tools has made several arrangements including online portals using Home TV, Radio, etc. for students so that students can continue learning in this time. Students are using various tools like WhatsApp, Zoom, Google Meet, Telegram, etc. for collaboration with the teachers or with other students. MHRD has developed a platform (e-Brochure-https://mhrd.gov.in/ict-initiatives) using ICT technology that combines all digital resources for digital learning. The following are the various platforms for online learning developed by MHRD:

a. DIKSHA: DIKSHA portal is an initiative of MHRD which centered around the teachers. It allows teachers to collaborate with others anywhere in the country. There are various blogs and journals for the teachers so they can update themselves about the new happenings in the field of education. The teachers can also publish their content on the website. The app is available on the Google Play Store and the website is .https://diksha.gov.in.

b. e-Pathshala: e-Pathshala is an e-learning app for students of class from 1 to 12 in multiple languages like Hindi, Urdu, English, etc. The app contains books, videos, audios, etc. for students, parents, teachers, etc. in many languages. The application is available on the Google Play Store and the link is http://epathshala.nic.in

c. National Repository of Open Educational Resources (NROER): NROER was launched by MHRD, Department of School Education and Literacy, the Central Institute of Educational Technology, National Council of Educational Research and Training and Metastudio. This portal provides various educational resources for students and teachers in various languages including books, interactive modules, and videos. Website is: http://nroer.gov.in/welcome

d. Swayam: Swayam is the national online educational platform containing almost 1900 courses covering both secondary and higher education including engineering, social science, law and management courses. The best feature is that it is integrated with conventional education. Website: https://swayam.gov.in/

e. Swayam Prabha: Swayam Prabha transmits educational contents on 24x7 basis and has 32 DTH TV channels. The schedule for the channel is available in the portal. This channel also covers both school and higher education. Website: https://swayamprabha.gov.in/

f. e-PG Pathshala: It is for postgraduate students. The students can access this portal for e-books, online courses and stud material. Website: https://epgp.inflibnet.ac.in/

6. CONCLUSION

COVID-19 has affected all the sectors in India especially the educational sector. The challenges in the country due to the pandemic have increased a lot but it evolved many opportunities also. As the schools and colleges are shut for an uncertain period of time, the Indian Govt. came up with different ICT technologies to cope up with the present crisis in the educational sector. However, our country is still not prepared enough with the online infrastructure to reach out to the masses. All students in India are not privileged enough to

use these digital platforms. But Universities and the Indian Govt. are trying day and night to resolve this problem

If the pandemic stretches for a longer period of time, then some major steps should be taken in the area of online education so that it will reach the urban as well as rural areas of the country and all the students will be benefitted equally.

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Importance of Online Learning Platforms in Skill Development during Lockdown

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Abstract: ***"In the midst of every crisis, lies great opportunity." The above quote of Albert Einstein holds greater meaning in the times of the current crisis that the world is facing. Covid-19 has brought many upheavals affecting the economies of the world. The global pandemic has changed the dynamics of the workforce. In the present situation, the employees have plenty of time at their disposal due to dip in economic activity. Hence, it is imperative that they work towards skill enhancement and re-skilling during the Lockdown period. In order to achieve that, the internet is helping the workforce to upgrade themselves professionally. This research paper discusses the models of various online platforms that offer different materials and courses to create new skills or enhance existing ones. For the analysis, we will focus on the length of the course, method of course delivery and learning assessments amongst others. This study emphasizes the extent of professional and personal benefits an individual may gain from utilising the resources provided by such online learning platforms to develop and enhance skills in the lockdown.***

Keywords: Pandemic, Lockdown, On-line Learning Tools, E-learning platforms

1. INTRODUCTION

An online learning platform[1] is an integrated set of interactive online services that provide trainers, learners, and others involved in education with information, tools and resources to support and enhance education delivery and management. Considering the recent conditions, having a surplus of time at hand one can employ themselves to adapt and retrain skills for various purposes, whether for economic or personal gains. Thus the biggest source of knowledge, the internet comes into the picture. Online education is on track to become mainstream by 2025 [2].

Recently, numerous platforms (or websites) have surfaced and gained popularity in the last decade, namely Udemy[3, 4], Udacity[5], SkillShare[6], eduX[7], BYJUs[8], Shiksha.com[9] and many others.

The models employed by such websites are focused on Self learning, the activity of acquiring knowledge by oneself, without a teacher or an instructor. Whereas the platforms focus on the quality of courses available as the entire experience of learning through such platforms depend upon the ability of the content creators, ie the instructors and the resources they provide to the platform (resources, being the videos and the theoretical or practical knowledge). Some rather professional variations of E-learning platforms[10] even employ instructors from various well known Universities and educational institutes.

This paper compares the rather popular E-learning platforms in the current generation of Online learning:Their accessibility, content-quality, academic values, variation of content as well as the unique features of each website.

2. BACKGROUND

A. UDEMY

Udemy[3, 4]is an American online learning platform aimed at professional adults and students, developed in May 2010. As of January 2020, the platform has more than 50 million students and 57, 000 instructors teaching courses in over 65 languages. There have been over 295 million course enrollments. Students and instructors come from 190+ countries and 2/3 of students are located outside of the U.S. Udemy also has over 5, 000 enterprise customers and 80% of Fortune 100 companies use Udemy for employee upskilling.

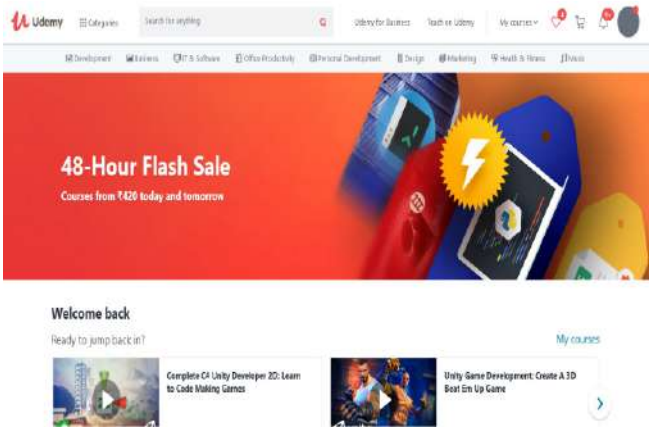

Fig. 1. Home page of Udemy

Udemy fulfills the philosophy to optimize the learning process for a self-learner. It is self-paced, individual oriented, and provides the opportunity for flexible learning. It has by far the largest variety of courses on various degrees of subjects.

Essentially it hosts a course for almost anything.

The most eye-catching features provided by Udemy are the frequent sales on available courses, wishlist creation for saving courses for later as well as a highly developed on site Chat system that provides for communication between users and instructors.

Udemy also provides a good visual environment with focus on video elements or text documents with the entire course content available at a glance on the right pane. Every course has a well written Overview, a "What you'll learn" section, description and requirements section provided on the course page which gives insight to the course content as well as a general gist of what the course covers.

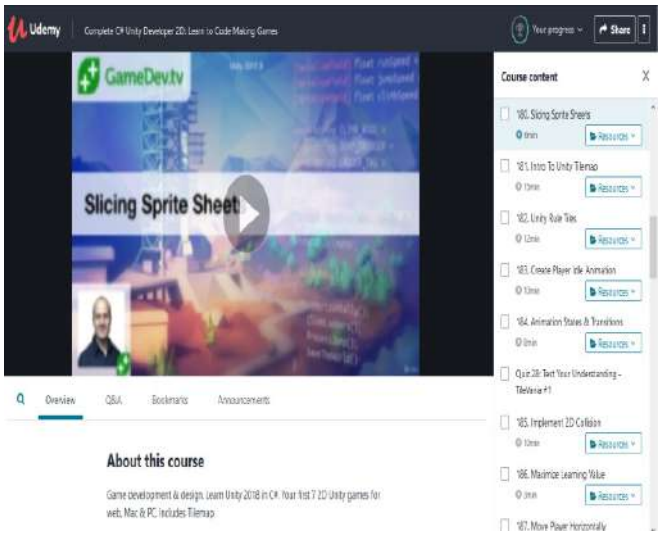

Fig. 2. The course UI of Udemy

The most important feature of Udemy is an active Q&A section that provides quick interactions between the instructor and the student, or between other students as well this can be used for announcements, clearing doubts and resource sharing.

The majority of courses available on Udemy are proprietary and require a purchase to gain access beforehand. Udemy also saves the progress a student makes as well as keeps track of video bookmarks which can be created for revising important topics.

B. Skillshare

Skillshare[6] is an American online learning community for people who want to learn from educational videos. The courses, which are not accredited, are available through subscription. The majority of courses focus on interaction rather than lecturing, with the primary goal of learning by completing a project.

Fig. 3. Homepage of Skillshare

All the classes on Skillshare are divided into three different categories: **Create** (Film & Video, Graphic Design, Music, Photography, Web Development, etc.), **Build** (Business Analytics, Freelance &Entrepreneurship, Leadership & Management, Marketing), and Thrive (Lifestyle, Productivity). The defining features of skillshare are the subscription based model where you can access courses according to different subscription tiers, a Q&A section and video comments for questions as well as regular assessments for each unit gives a good edge. A student needs to pay a fixed fee per month or per year for unlimited access to every course and workshop on the platform.

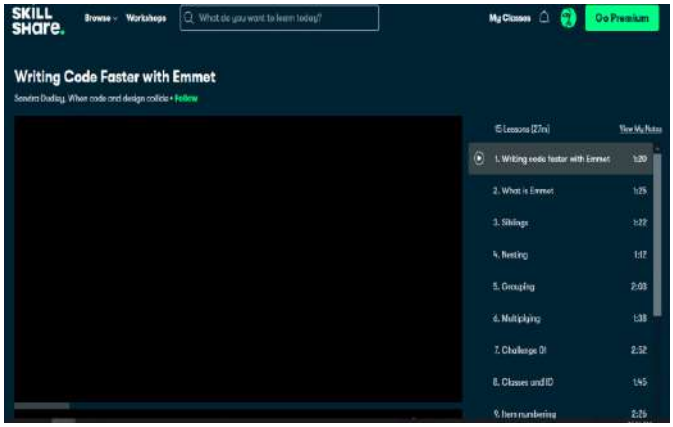

Fig. 4. UI interface of courses

Skillshare doesn't provide a certificate stating that a student has completed a course, therefore, a student will not get any proof and just the knowledge and skills. However, after a student creates a project during one of the Skillshare classes, he/she will receive a URL that can be showcased in the resume or portfolio. Therefore, it does value addition to your resume by showcasing practical knowledge in place of a certificate.

C. NPTEL

NPTEL[11] is an acronym for National Programme on Technology Enhanced Learning which is an initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and

Indian Institute of Science (IISc) for creating course contents in engineering and science.[5]

Fig. 5. Homepage of NPTEL

NPTEL as a project originated from many deliberations between IITs, Indian Institutes of Management (IIMs) and Carnegie Mellon University (CMU) during the years 1999-2003. A proposal was jointly put forward by five IITs (Bombay, Delhi, Kanpur, Kharagpur and Madras) and IISc for creating contents for 100 courses as web based supplements and 100 complete video courses, for forty hours of duration per course.

NPTEL provides written examinations and as well as various assignments for comprehension of courses as well as a practical examination for real world application of the course subjects.

NPTEL provides all courses for free, for certificates you need to pay the fee after completion of 70% of the course.

3. ANALYSIS & COMPARISON

To compare the various platforms available we have used a set of parameters that define the user experience as well as ease of access to these platforms.

For the Pricing system of each of these platforms, we have found that the pricing system of NPTEL to be the most affordable, whereas Skillshare's subscription system to be the most convenient

	Pricing System
UDEMY	Udemy hosts a one time purchase for lifetime access model where all the courses require purchase before access to the content, Once bought, the entire content of the course as well as future revisions to the said course are accessible to the user. The certificate provided is included in the cost of the course and provided once the user has completed the progress as well as all the said assignments.
SkillShare	SkillShareses a monthly subscriptions system for allowing access to tiers of courses where different tiers of monthly subscription gives access to various courses. Not only is it quite convenient to have an automatic payment system it even allows access to a larger course library at a smaller price.
NPTEL	NPTEL provides access to all of its courses for no cost. Anyone can access all the courses as well access the FAQ section for doubt resolution. For certificates, a one time payment is required that includes the cost of all the assessments, practical, theoretical as well as the assignments.

Each of these websites has a few unique features thatdefine their characteristics as well as help in establishing a preference for each.

	Feature Set
UDEMY	**QnA section -** An entire dedicated community for each course as well as a system for direct interaction between the student and instructor, can be used for doubt resolution. **Internationally valid certifications:** The certificates acquired on udemy are valid internationally **Course Overview and Demo Content: All of the courses** host a few demo chapters as well as an entire section dedicated to the review as well as course information. **Progress tracking:** Udemy can keep track of the users progress as well as their bookmark on videos and chapters. **Resources:** Instructors can provide relevant content to individual chapters alongside transcriptions and notes related to each chapter in the resources section.
SkillShare	Comment section: This feature issimilar to Udemy's Q&A section. Users can comment on the videos of individual courses as well as review them after completion. Course Review: Skillshare allows reviewing courses after completion providing new

	students an opportunity to gauge the courses quality. **Resource sharing:** Skillshare also provides instructors the chance to give resources as attachments to the course content. **Difficulty Gauge:** Each Course has a designated recommended experience level required to fully understand the course as a prerequisite.
NPTEL	**Semi-Annual Theoretical Examinations:** NPTEL hosts proper physical examinations for students enrolled into every course in a given semester as well as a practical exam.This adds to the sense of genuinity of the certificates that they provide. **Delayed Payments:** NPTEL courses require payments from students interested in certifications of the said course. This payment initiates once the student has passed a threshold of progress. It also offers opportunities for refunds. **Academic value:** The certificates provided by NPTEL are officially recognised and have a genuine value attached to them.

In order to test the variety and flexibility of courses and subjects available on each platform we had to perform a test. The following test hopes to accomplish a certain goal; to find the number of courses available on a given subject (randomly selected) and to find the flexibility of subjects covered by each platform.

In order to perform the test a set of handpicked subjects (completely random) was chosen and the number of available courses on that subject were recorded.

Course searched	**Udemy**	**Skillshare**	**NPTEL**
"Learning C#"	About 10, 000 results, 1400 found free of cost	5 courses with over 3000 students, About 26000 results	None found
"Physics"	1029 results	About 427 results	About 72 courses
"Guitar"	1940 results	291 results	None Found
"How to draw Manga"	2732 results	493 results	None Found
"3D graphics tutorial"	8190 results	112 results	4 results*
"Game development"	1571 results	864 results	4 results*
"Python"	10000 or more results	365 results	5 courses

A sample of the test cases searched across each site

*Note * : Keyword based search results*

In the above experiment, results are not an accurate description of all the courses available being relevant to the topic search, about 20% of the said results were actually completely relevant to the searched subjects and 80% were relevant to the search keywords.

It is a given that **NPTEL** is an Engineering/academics focused website and would most likely have the least flexibility of subjects. This obviously explains its poor performance in a randomized subject test.

Between **Udemy** and **SkillShare** we see a good competition in terms of flexibility of subjects and a large number of courses available for each subject. With Udemy having the largest database of courses on almost all subjects that we tested upon, it is a given that it has the most flexible and largest library of content out of all the leading E-learning platforms.

4. CONCLUSION

From our analysis of various online learning platforms, it was observed that online education has been evolving at a high rate. Today, there are platforms which are centered to some specific domains like NPTEL and others like Udemy have courses on almost every subject. We also observe that there are platforms that focus just on knowledge sharing like Skillshare while others validate learning by offering certificates like Udemy.

Given the variety of courses, flexibility of learning and availability of time, students have so many options today to re-skill and upskill during lockdown. Be it professional or personal skill, students today are fortunate that the knowledge they seek is just a click away. Therefore, lockdown has become a golden opportunity for each student to unlock their potential by exploring the resources available through the world of the internet

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Digital Transformation in Education Sector in India during Covid 19

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Abstract: ***The present paper attempts to identify the recent trends in the field of Ed-Tech that have gained momentum during lockdown to combat Covid19 and the future of application of technology in Education in India.There has been a surge in digital learning platform providers bringing in new technology products and trying to redefine learning processes.Edupreneurs are bringing in new wave of innovations in the field of education.B2B Edtech, Gamification of Learning, rise Of edutainment, AI enabled personalised Education, Coding, Tech Courses For Kids and Skilling And Upskilling are going to gain further momentum post Covid19.***

Keywords: Covid 19, Edupreneur, Edtech

1. INTRODUCTION

Lockdownduring Covid 19 has given rise to increased use of technology in education along with edupreneurs bringing in new wave of innovations in the field of education. There has been a surge in digital learning platform providers bringing in new technology products and trying to redefine learning processes. The Covid-19 pandemic raging around the globe has caused large-scale institutional and behavioural 'shock effects' in various areas of human activity including education. The impact on learners is unprecedented, there are over 990, 324, 537 students (56.6% of total enrolled learners) worldwide from primary to tertiary level who got affected due to covid 19 (UNESCO 2020).

However, while lamentable, the disruption to education systems has also offered valuable lessons and provided a unique opportunity for the stakeholders to reimagine education. The disruption has opened up numerous opportunities for entrepreneurs and innovators in the education technology space. It gave rise to many new business models, and many existing EdTech startups have seen an exponential growth both in terms of number of users and revenues over the past few months. (Stephen Soulunii, 2020) Platform capitalism' and 'surveillance capitalism' describe the new business model and market form of the web. These forms of digital capitalism have begun to infuse the higher education landscape by merging with existing political demands for universities to become more data-driven, competitive, and market-focused. (Williamson, B., 2020)

Further New Education Policy (2020) is set to provide a significant impetus to the role of technology in all aspects of education and has opened a whole new set of possibilities for the edtech sector. While edtech players have majorly dealt with online education, now NEP will also encourage digitisation within the physical classrooms. Hence, it paves the way to create innovative products and content. Companies can indulge in designing immersive technology for classroom learning. (yourstory.com) New Education Policy aims to see that technology is appropriately integrated into all levels of education for: i) improving teaching, learning, and evaluation processes; ii) supporting the preparation of teachers and their continuous professional development; iii) enhancing educational access to disadvantaged groups and iv) streamlining education planning, administration and management. (NEP, 2020) The thrust of technological interventions will be for the purposes of improving teaching learning and evaluation processes, supporting teacher preparation and professional development, enhancing educational access, and streamlining educational planning, management, and administration including processes related to admissions, attendance, assessments, etc. (NEP, 2020)

According to a recent report by Indian Private Equity and Venture Capital Association (IVCA) and PGA Labs, Indian EdTech startups have seen a total investment of $2.22 billion in 2020 as compared to $553 million in 2019. The report, 'The Great Un-Lockdown: Indian EdTech', stated that 92 players received funding in 2020, out of which 61 received seed funding.

In the light of new developments, present paper attempts to explain the recent trends in the field of Ed-Tech and the application of technology in India in coming years.

2. REVIEW OF RELATED LITERATURE

Jha.N, Shenoy.V. (2016) in their paper 'Digitization of Indian Education Process: A Hope or Hype' analyzes the nature of the modern education process in India where diversity is seen not only in culture and ethnicity but also in purchasing power and affordability of the Indian people. The paper notes that to make online education successful in India we need to modify the entire education sector and the mind-set of the employers as it has not gained their favour yet. We are yet to travel miles before we reach the stage where we can proudly say

certificates and degrees are just piece of papers for us we value knowledge of the person. The study proposes hybrid model to meet the requirements of Indian students where there should be a combination of physical presence of the teacher and technology.

Keswani. B, Banerjee.C, Patni.P. (2014) in their paper 'Role of Technology in Education: A 21st Century Approach' outlines how information technology can help to create an education system that is based on the principles of helping teachers, students and administration to be effective in what they do, improving the quality and relevance of teaching learning process. According to the paper, some benefits of using information technology in education: It induces scientific, economic, technological, information and multicultural literacy and global awareness, promotes inventive thinking and develops effective communication which leads to teaming, collaboration and interpersonal skills.

Nisha.F, Senthil.V. (2015) in their paper 'MOOCs: Changing Trend Towards Open Distance Learning with Special Reference to India' provides an overview about massive open online courses (MOOCs), about how technology has changed over the years the face of distance learning and how relevant and beneficial these courses might be for distance learners. Studies related to MOOCs in India and world around have been reviewed. The paper concludes that MOOCs and online education has a huge potential which would help in accelerating and ensuring social cohesion and sustainable growth. With little efforts by the Government of India, online education can successfully reach every individual.

Technology increasingly is being used to personalize learning and give students more choice over what and how they learn and at what pace, preparing them to organize and direct their own learning for the rest of their lives. Sophisticated software has begun to allow us to adapt assessments and instruction to the needs and abilities of individual learners and provide near real-time results. Nationally, significant progress has been made toward ensuring that every school has high-speed classroom connectivity as a foundation for other learning innovations. The cost of digital devices has decreased dramatically, while computing power has increased, along with the availability of high-quality interactive educational tools and apps. Technology has allowed us to rethink the design of physical learning spaces to accommodate new and expanded relationships among learners, teachers, peers, and mentors. (Office of Education Technology US, 2017)

3. TRENDS IN EDTECH IN THE YEAR 2020

As a result of Covid 19, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms. Even before COVID-19, there was already high growth and adoption in education technology, with global edtech investments reaching US$18.66 billion in 2019 and the overall market for online education projected to reach $350 Billion by 2025. Whether it is language apps, virtual tutoring, video conferencing tools, or online learning software, there has been a significant surge in usage since COVID-19. (World Economic Forum, 2020)

A report by Indian Private Equity and Venture Capital Association (IVCA) and PGA Labs identified following trends:

- B2B Edtech Target Traditional Institutions, Teachers
- Gamification Of Learning And Rise Of Edutainment
- AI Personalises Education
- Coding, Tech Courses For Kids
- Skilling And Upskilling

4. B2B EDTECH TARGET TRADITIONAL INSTITUTIONS, TEACHERS

B2B Edtech firms have also seen a big boost in growth during COVID-19, the major drivers for the same being schools & universities. B2B in Edtech includes **Enterprise Resource Planning** (ERP) and **Learning Management System** (LMS) based solutions. These solutions form the backbone of Edtech based offerings to students. During the lockdown when hundreds of schools and universities had to close down, these ERP and LMS solutions helped in bringing the classes online and allowed and administer students remotely. All the student's database, attendance, score sheet, syllabus, curriculum, etc. (NASSCOM, 2020)

5. GAMIFICATION OF LEARNING AND RISE OF EDUTAINMENT

Gamification is the concept of applying game mechanics to engage and motivate students in learning. (Mohamad, Sazali, Salleh, 2018).Gamification, applying game-designed thinking to non-gaming applications, is a tool that's grown in popularity and is creatively advancing education. There are various ed tech startups like Byjus, Cuemath, toppr etc. which have made gamification extremely popular. Edutainment, say experts, brings education and entertainment in such a manner that gamified learning through animation becomes engaging and at the same time, increases productivity. The idea with edutainment is to make learning fun, in a way where the child's entertainment quotient doesn't take a hit while the intelligence quotient increases. (FORBES, 2020) Beyond gamification, startups have also started taking steps to make education more interesting with the medium of interactive videos, music and proprietary stories-based curriculum. Some young startups in this domain have been Kiddopia, Kutuki Kids Learning, TinyTapps, Enguru, and Lido Learning. (PGA labs and IVCA, 2020).

6. PERSONALISED EDUCATION

Today's colleges and universities face a wide range of challenges, including disengaged students, high dropout rates, and the ineffectiveness of a traditional "one-size-fits-all"

approach to education. But when big data analytics and artificial intelligence are used correctly, personalized learning experiences can be created, which may in turn help to resolve some of these challenges. With a personalized learning experience, every student would enjoy a completely unique educational approach that's fully tailored to his or her individual abilities and needs. This could directly increase students' motivation and reduce their likelihood of dropping out. It could also offer professors a better understanding of each student's learning process, which could enable them to teach more effectively. (Rouhiainen, 2019)

7. CODING, TECH COURSES FOR KIDS:

Over the past few years, trend of teaching coding to kids has increased. Various market players like White Hat Jr, Coding Ninjas and LeapLearner etc are gaining huge profits. WhiteHat Jr grew into a trendsetter of coding for the kids segment within the short span of two years. It not only achieved a run rate of $150 Mn and 4.2 Mn annual paid subscribers but also got acquired by edtech giant BYJU'S.

8. SKILLING AND UPSKILLING

About 122 Mn people lost their jobs as of August 2020, as wounded companies accelerated towards digital transformation. Organisations started making data-driven decisions making more important aspects of their survival, and the impact of edtech will also go beyond schooling into upskilling and reskilling. (PGA labs and IVCA, 2020).

9. SCOPE OF APPLICATION OF TECHNOLOGY IN EDUCATION IN FUTURE

1. E-learning or cloud learning

Covid 19 has made E learning and cloud learning a reality for everyone. This trend is going to stay. Platforms providing on-demand learning/coaching and solutions in vernacular languages are gaining huge momentum these days.

2. Use of Analytics in Education

Educational Institutions are using Learning Analytics and Academic Analytics to improve students learning experience and manage their resources in a more efficient way. In future, use of analytics in education is going to improve even further.

3. Collaborations and partnership between Educational Institutions, Analytics companies

Educational institutions and companies must pool financial resources in order to expand the digital base of content available to learners. Cross-sector collaborations and partnerships are also becoming more common. B2B model in Edtech is going to grow further. Platforms to automate administrative operations in schools are increasing.

4. Augmented Reality (AR)/Virtual Reality(VR) in EdTech:

By creating an immersive and interactive learning experience without the use of textbooks, AR and VR technology empowers learners to explore and learn at their own pace, thus stimulating learning and comprehension and enhances critical retention. VR and AR-based apps for education, that combine digital technologies and learning, improve the educational process and allow students to acquire information visually.(eduplus now, 2020)

5. Online STEM learning: Problem solving and learning platform for science, technology, engineering & mathematics is also gaining momentum.

10. CONCLUSION

It can be concluded that technology is going to have a big impact on Education. Cloud learning is going to define the concept of anytime anywhere learning. Learning analytics and academic analytics will help in providing user oriented courses at low cost.B2B Edtech, Gamification Of Learning And Rise Of Edutainment, AI Personalised Education, Coding, Tech Courses For Kids and Skilling And Upskilling are going to gain further momentum post Covid19.

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A Study on Mutual Funds in India

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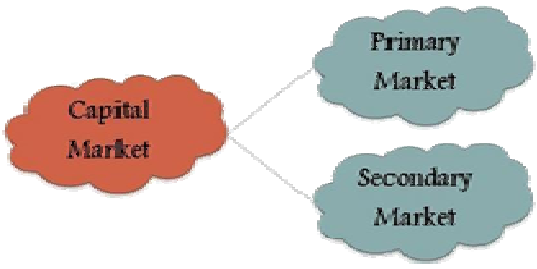
Abstract: A Mutual Fund is a faith that pools the savings of a numeral of investors who share a joint financial goal. The cash collected is invested by the fund manager indiverse types of securities depending upon the objective of the scheme. A Mutual Fund is the most appropriate investment for the common man as it offers aprospect to invest in a diversified, professionally managed portfolio at a relatively low cost. The small savings of all the depositors are put together to increase the buying power and hire a professional manager to invest and monitor the currency. The research paper presented will study the various objectives to invest through mutual funds. The primary need of the paper is to understand theneed to invest through Mutual Funds. The paper also focuses on the need of understanding variousschemes of Mutual Fund. Furthermore, it also precisely studyabout the stepsof investment in Mutual Funds. It gives us an insight about Diversification, Professional management and Regulatory oversight, liquidity and convenience of Mutual Funds.

Keywords: Mutual Funds, Capital Market, Securities, Shares, Investment

1. INTRODUCTION

A capital market comprises of shares and securities, where professional enterprises or companies and government organisations can increase long-term funds. Capital market is further sub divided as primary markets and secondary markets. In primary market new stock or bond issues are sold to stakeholdersthrough underwriting. In secondary market, the existing securities are sold and brought amongst investors andtraderson a security exchange.

The capital market is bifurcated in two parts, primary and secondary market:



Primary Market: It is popularly known as New Issues Market.It is the market for the trading of new securities are done for the first time. It holds both initial public offering and public offering. In the primary market, the mobilisation of funds has been done with the help of prospectus, right issue and private placement ofsecurities.

Secondary Market: It is known asthe market for old securities.Securities which are issued in the primary market are operated here. The trading takes place among investors, who follows the original issue in the primary market. Stock exchange and over-the counter market both are covered by it.

2. OBJECTIVES OF STUDY

1. To understand the fundamental concepts of Mutual Funds.
2. To access the need to invest through Mutual Funds.
3. To Understand the schemes of Mutual Fund.
4. To study the stepsof investment in Mutual Funds.

Research Methodology: Descriptive Research Design is used in this study.

3. MEANING OF MUTUAL FUND

Mutual fund is aninstrument for combining money by distributing units to the depositors and investing funds in securities asrevealed in proposal document.Securities investment are spread cross-section of industries and sectors and thus the peril is expanded because all stocks cannot move in the same direction in the same quantity at the similar time. Mutual funds issue units to the depositorsaccording to the quantum of money invested by them. Mutual funds Investors are known as unitholders

A Mutual Fund is the ideal investment for today's multifaceted financial scenario. Marketplaces for equity shares, bonds and other immovable income instruments, real estate derivatives and other assets have become mature and information driven. Price variations in these assets are driven by worldwide events happening in distant places. An individual is unlikely to have the information, skills, inclination and time to keep track on proceedings. An individual also finds it's to keep track of his ownership of his assets, investment, brokerage due and bank transactions etc.

4. CHARACTERISTICS OF MUTUAL FUNDS

- Mutual Fund belongs to the stakeholders who have shared theirfunds.

- Investment professionals and other services providersmanaged Mutual fund and earn a fee from their services.
- In a portfolio of marketable investments pooled funds are invested. It is updated everyday.

5. BASICS OF MUTUAL FUNDS

Net Asset Value or NAV: Total asset value (net of expenses) per unit of the fund is known as NAV which is calculated by the AMC at every business day end.

Calculation of NAV: Portfolio value is in calculated on daily basis. For calculating this, all expenditures are subtracted and the resulting valueis divided by the number of units.

Expense Ratio: AMCs charge is an annual fee, or expense ratio that covers administrative costs, salaries, advertising expenses, brokerage firm fee, etc. A 2.5% expense ratio means the AMC charges Rs2.50 for every Rs100 in assets under management. Generally, the costs of running a fund grow slower than the growth in the fund size so, the additional assets in the fund, the lesser should be its expense ratio.

Load: Few AMCs takes sales charges, or loads, on their funds to compensate for distribution costs. Funds purchased without a sales charge are called no-load funds.

Open- and Close-Ended Funds

1) Open-EndedFunds

Investors can enter and exit the fund scheme during the scheme time (by purchasing/ retailing fund units) at its NAV (net of any load charge). Gradually, AMCs are issuing frequently open-endedfunds.

2) Close-EndedFunds

Redemption takes place when the period of the scheme isover. Though, they are listed on the stock exchanges and stakeholders can purchase/ trade units in the secondary market.

Important documents

Two main documents that are important for the fund's policy and performance are as under:

- Legaldocument known as Prospectus.
- Quarterly shareholder reports.

6. REASONS OF INVESTMENT THROUGH MUTUAL FUNDS

Professional Money Management

For implementing a consistent investment strategy funds manager are responsible that reflects the goals of the fund. Market and economic trends are also monitored by fund managers and toanalyse securities in order to make investment decisions.

Diversification

The best ways to reduce risk is Diversification. Mutual funds gives investors chance to diversify assets depending on their investment requirements.

Liquidity

Stakeholders can sell their mutual fund units on any business day and obtain the current market value on their reserves within a quick time period .

Affordability

Mutual fund minimum initial investment is fairly low for most funds (Rs500 for few schemes).

Convenience

Automatic withdrawal plans and the automatic reinvestment of interest and dividends are provided by many private sectors

Flexibility and variety

We can buy balanced funds from conservative, blue-chip stock funds, sectoral funds that goal to provide income with modest growth.

Tax benefits on Investment in Mutual Funds

- Exemption of Income Tax on all Mutual Fund dividends are 100%
- Equity Funds –15% taxed on Short term capital gains . Long term capital gains are not applicable. Debt Funds - As per the slab rates applicable is taxed on short term capital gains.
- Open-end funds with equity exposure of more than 65%

7. TYPES OF MUTUAL FUND SCHEME

On the basis of its structure and its investment objective Mutual funds Scheme can be divided into two parts.

BY STRUCTURE

- **Open-end Funds**: An open-end fund is available for subscription throughoutthe year. They do not have a static maturity. Investors can suitablypurchase and sell units at Net Asset Valueprices. The important feature of open-end schemes isliquidity.
- **Closed-end Funds**: A closed-end fund has a specified maturity period which normallyreaching from 3 to15 years. The fund is open for payment only during a stated period. Depositors can invest in the scheme at the time of the initial public issue and after this stock exchange is the option where they are listed.
- **Interval Funds Interval funds**: This Combines the features of both open-ended and close-ended schemes.

They are open for sale or recovery during pre-determined breaks at NAV related values.

8. BY INVESTMENT OBJECTIVE

- **Growth Funds:** The purpose of growth funds is to give capital appreciation over the medium to long term. Such schemes generally invest a mostly of their corpus in equities. It is proved that returns from stocks, have outstrippedutmost other kind of investments held over the long term time period. Growth schemes are perfect for stockholders having a long-term outlook looking fordevelopment over a period of time.
- **Income Funds:** The goal of income funds is to provide consistent and stable income to investors. Such schemes commonly invest in fixed income securities such as bonds, corporate debentures and Government securities. Income Funds are perfect for capital constancy and steady income.
- **Balanced Funds:** The objective of balanced funds is to delivertogether growth and unvarying income. These schemes distribute a part of their receiving and invest both in equities and immovable income securities in the share indicated in their offer documents.
- **Money Market Funds:** The purpose of money market funds is to offer easy liquidity, preservation of capital and restrained income. These schemes mostly invest in harmless short-term instruments such as treasury bills, certificates of deposit, commercial paper and inter-bank call money. Revenues on these schemes may vary depending upon the interest rates prevailing in the marketplace. These are perfect for Corporate and separate investors as a means to park their extra funds for short periods.

9. STEPS OFINVESTMENTS IN MUTUAL FUNDS

- **Step one - Identify your Investment needs**

  The financial goals vary a lot as it is based on age, lifestyle, financial independence, family commitments, and the income profile and expenses. Hence it is very important to initially assess your needs. This can begin by defining the objectives and needs of investment, which could be for purchasing a new home or finance a wedding or educate your children or a it could also be a combination of all these needs.

- **Step Two - Choose the right Mutual Fund**

  The next step would be to select the right mutual fund scheme that should most appropriately match your requirements. The offer document of the scheme should be elaborated and explain the objectives of the scheme and should provide other supplementary details like the track record of other schemes managed by the same Manager. There should be an assessment done of various factors before selecting a particular Mutual Fund which includes the track record of the performance of the fund over the past few years in comparison to the similar funds belonging to the same category. Other secondary factors include portfolio allocation, the dividend yield and the degree of transparency as reflected terms of the frequency and quality of their communications.

- **Step Three - Select the ideal mix of Schemes**

  Investment in just one Mutual Fund scheme may not meet all the investment needs in this dynamic world of competition, therefore a smart decision would be to invest in a combination of multiple schemes to achieve the specific financial goals.

- **Step four – Invest regularly**

  The best approach to increase your gains is to invest a fixed amount at specific time intervals, say every month, or a quarter or may be even an year. By investing a fixed amount systematically specifically monthly, a fewer units may be purchased whenever the prices are going to hike and more units should be purchased when the price is low. This is going to bring down the average cost of purchase per unit. This concept is defined to be rupee cost averaging and most of the investors all over the world follow a disciplined investment strategy. The systematic investment plan facility may also be availed that are being offered by many open-end funds.

- **Step Five – Start early**

  It is always advised to start investing early and should stick to a regular investment plan. An early investment will lead to better and early results as compared to being late. The compounded return will enable you earn more on your income and your investment will multiply at a compounded rate of return.

10. CONCLUSION

Mutual funds is a simple scheme of saving and investing. It is very easily accessible, and affordable by all people belonging to various financial platforms. The main advantages of mutual funds include professional management, diversification, variety, liquidity, affordability, convenience, and ease of recordkeeping being bound by strict government regulation and full disclosure. The best mutual funds design their portfolios in a manner such that an individual investments will always react differently in the same economic conditions. Most mutual funds give an high end opportunity to highly placed professionals to manage their investments. These managers decide what kind of securities vcan be purchased and sold with the available funds. Mutual fund expenses are available at a very convenient rate of no more than 1.5 percent of our investment. Expenses for Index Funds are always comparatively lesseras index funds are not being actively managed. Instead, they automatically purchase the stock in companies being listed on a specific index. However, If the entire stock market declines in value, the value of mutual fund

shares will also go down parallelly as well, no matter how balanced the existing portfolio is. Investors also encounter fewer risks when they invest in mutual funds than as compared to when they deal in purchase and sale of stocks on their own. So, we ca conclude by realizing that investments through a mutual fund runs the risk of losing money also.

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IoT and Machine Learning enabled Smart Irrigation System

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Abstract: The Internet of Things (IoT) is aimed at connecting everyday ubiquitous objects over the Internet such that they can be accessed easily from anywhere.IoT technology can be suitably applied for creating a smart irrigation system by automating the process of watering the plant based on sensed values of temperature, soil pH, rain-water level etc. parameters to overcome the challenges of traditional manual irrigation. Polynomial Regression is a form of linear regression for machine learning which is used to make predictions on non-linear datasets, and can therefore be employed in an IoT-enabled irrigation system to make it smarter by predicting the future temperature values to estimate the irrigation needs. In this paper, taking case of a sample garden, different parameter sensors send over their status for the water pipeline motor to automatically open the valve if irrigation is needed. This implementation is done using Arduino boardand Bolt IoT kit and few scenarios are consideredfor the smart irrigation system to be trained to accurately predict future sensor values and irrigation needs accordingly.Additionally, alerts are also sent outusing Mailgun to provide updates to the user for easy monitoring of anomalies in the irrigation process and prompting them to takecontrol actions, if needed.

Keywords: Arduino, IoT, Prediction, Regression, Smart Irrigation, Python

1. INTRODUCTION

The economies rely on farming for their food production needs. The farmers however face difficulties in the irrigation process such as scarce groundwater, flooding, under-irrigation, over-irrigation, unpredictable rainfall etc.Over-irrigation is caused as a result of poor management and distribution such thatit leads to water wastage andwashing off of chemicals, causing water pollution. On the other hand, under-irrigation happens when minimal water is given to the crop, causing build-up in the salinity of soil, which requires leaching and proper drainage to carry away the accumulated toxic salts on the soil's surface, especially in dry areas having high rate of evaporation. Enough rainfall suggests that irrigation can be avoided and water can be saved for future use, while scarce water reserve denotes need of additional watering of the soil.

To overcome some of these problems, in this work, an automated irrigation system is implemented. It is enabled by IoT (Internet of Things) and machine learning (ML), making it a smart system. The hardware components of the deployed system are various sensors for measuring values of temperature, humidity, potential of hydrogen (pH) value, pressure which are operated using anArduino Mega board and the BoltWi-Fi module. The sensed values of these parameters indicate when the soil needs to be irrigated, and accordingly the water pump is automatically switched on and off. The future values can also be predicted using ML to know when irrigation will be needed [1].

1.1 Internet of Things

IoT is the technology that aims at extending Internet connectivity into everyday physical devices/objects to allow pervasive computing[2].These devices are embedded with sensors, actuators or other hardware/electronics like processing unit etc. along with Internet connectivity, to allow access and interaction over the web for remote monitoring and controlling purposes.IoT has been enabled by the integration of multiple technologies of embedded systems, machine learning, real-time data analytics, cloud computing, wireless sensor networks and control systems, and has evolved over the years[3]. It has a wide range of applications in different fields and is most popularly synonymous with smart homes, smart grids and other automated tasks of everyday life, wherein appliances and devices support some form of sensing or actuating/controlling or processing of data over time to help make decisions withlimited user involvement [4].

1.2 Machine Learning

ML is a subset of artificial intelligence (AI), and isthe scientific study of statistical algorithms and models that are used by computersfor performing specific tasks without having to explicitly write instructions, by relying on patterns and inferencing techniques instead. ML supervised algorithms, based on sample input data which is referred to as 'training data', build a mathematical model for decision-makingand forming predictions without having to be programmed explicitly for performing the particular task [5]. ML algorithms find use in a broad range of applications like facial recognition, spam filtering etc. where it does not seem feasible to design a traditional algorithm for efficientlyexecutinga task [6]. Data

mining is a field in ML that, through unsupervised learning, focuses on exploratory data analysis. In its applications across different businesses, machine learning is also signified as predictive analytics as it makes predictions on future values based on analysis of trends in data, as used in this work[7].

1.3 Irrigation Systems

Smart irrigation systems have been introduced for a while now. Following are some of the techniques which are currently in trend in the smart irrigation market:

- Precisely measuringthe usage of water to help avoid over-watering. Water flow meters can be effectively employed to help farmers reduce cost because of careful monitoring of water.
- Adopting drip irrigation to control the amount of water and fertilizers supplied to plants. This precise control can significantly bring down the water amounts needed for irrigation.
- Drilling of more wells to harness and utilize groundwater for irrigation. Even as the ground water level falls low, more wells can be planned and drilled out to meet the sustainable pumping levels and the water needs of the plants.
- Application of advanced software products for performing data analytics on the huge quantities of available input data, and derive conclusions from these sensor readings to inform important information to farmers to help them with their future decisions[1].

2. MATERIALS AND METHODS

2.1 Circuit Diagram

Fig. 1. shows the circuit setup of how the system being discussed looks on the board with all its components and connections.

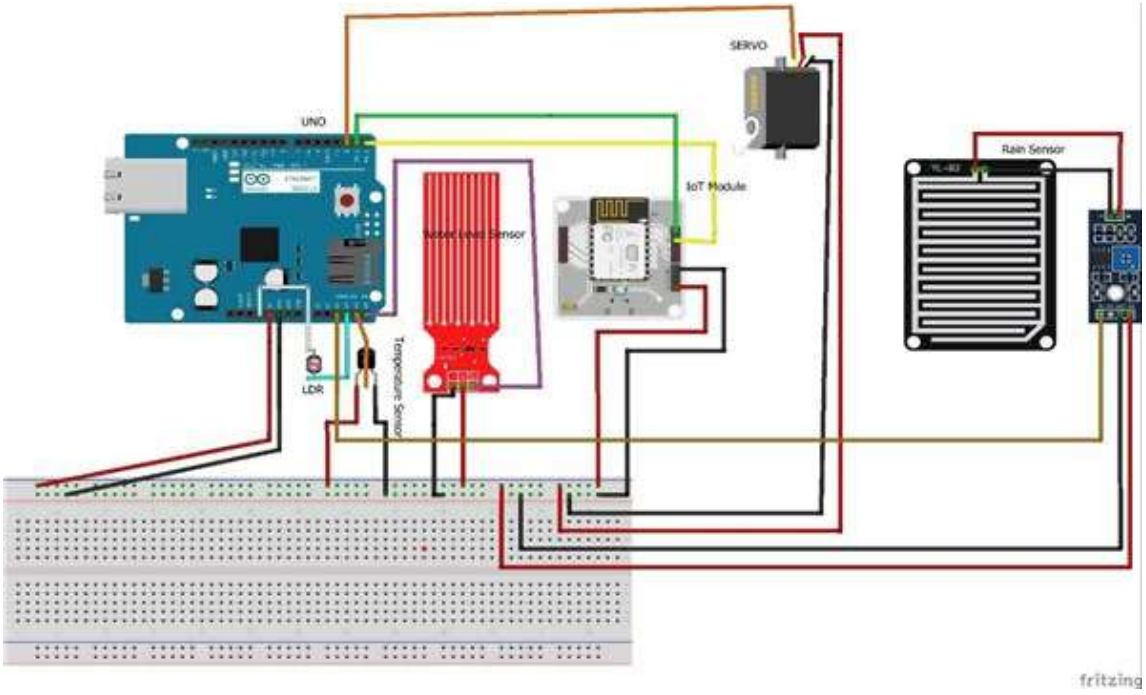

Fig. 1. Circuit Connections

In the shown circuit, the Arduino's 5V and ground pin are connected to the breadboard to create a power supply for all the other items. LDR (Light Dependent Resistor) sensor is connected to the 3.3V and A3 pin of the Arduino, and the temperature sensor(LM35) is connected to the A4 pin of Arduino.BoltWi-Fi (wireless fidelity) Module's Rx (receiver)pin is connected to Arduino's Tx (transmitter) pin and BoltWi-Fimodule'sTxpin is connected to Arduino's Rx pin, so whenever BoltWi-Fi Module generates trigger, Arduino will sprinkle water.Servomotor is connected to the Arduino D2 pin. The rain detector circuit is based on two transistors that are wired to behave like a switch that goes on when rainwater is sensed to havefallenon the sensor.Pin 1 i.e. Vcc (supply voltage for ICs) is a 5V DC (direct current) pin, Pin 2 is a GND (ground) pin, Pin3 is a high/lowdirect output (DO) pin, Pin 4 is an analog output (AO) pin. DO of the rain sensor module is connected to Arduino's A2 pin.

2.2 Hardware Components

Following are the components used in the system circuit, as also shown in figure 2:

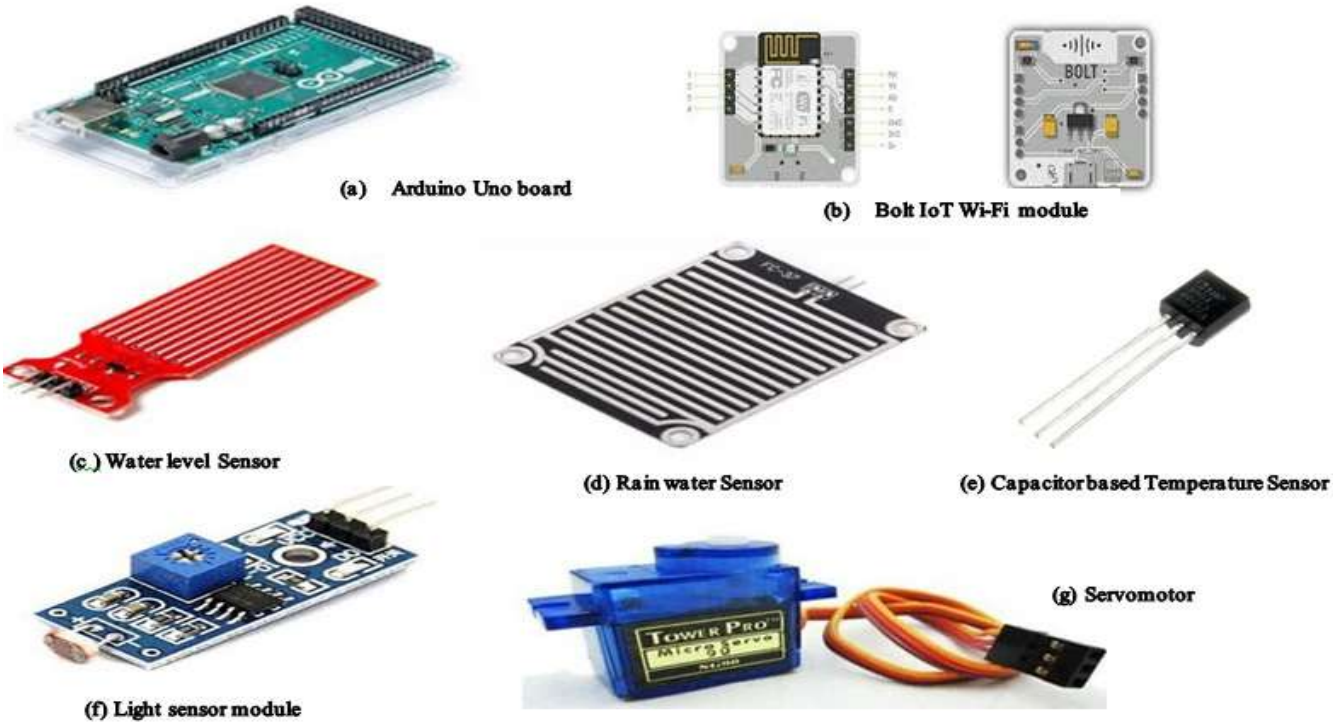

Fig. 2. Components used in the Circuit Board

- Arduino Mega 2560: It is a microcontroller board which has 54 pins for digital input/output (I/O), 16 pins for analog inputs, serial ports for hardware, a crystal oscillator, a Universal Serial Busconnection, a reset button, and a power jack. The boarddesign is useful for tasks requiring more memory and I/O lines andis also suitable for projects based on robotics, 3D printers etc. So, given the Arduino platform's simplicity and effectiveness, there is a lot of opportunities for building projects around it, just like the work presented in this paper. Themicrocontroller board has been programmed using an Arduino Software IDE[8].
- Temperature Sensor: It's a device, usually a thermocouple or RTD (Resistance Temperature Detector), which collects temperature data from a source and converts it into aform that is understandable for another device/observer. These sensors are generally used for applicationssuch asenvironmental controls for HVAC (Heating, Ventilation and Air Conditioning) system, food processing units, medical devices, automotive etc. Variety of temperature sensorsexist that, based on their application range, exhibit different sensing capabilities.
- Light Sensor: Also referred to as 'photo sensor' or 'photoelectric device', it is a passive device which changes the photons i.e. light energy to electrons i.e. electricity.Theradiant energy existing in the narrow frequency range of the spectrum, referred to as light, is measured and an electrical signal indicating the light intensity is output by the sensor. A LDR is used in this work, which changes resistance when light falls on it.
- Water Level Sensor: This sensor detects the levelof substances like liquids, powders, granular materials and slurries which can flow. The level can be measured inside containers or can be measured for an open water body, determining the number of materials present or flowing in them.
- Rain Sensor: It acts like a switching device thatdetects rain drops and in the event of rainfall, it closes down the irrigation system it is connected to. Therefore, it finds suitable applications in water conservation systems or for protecting an automobile's interiors by supporting automatic activation of wipers on the windscreen.
- Servomotor: It is anactuator which can precisely control the linear or angular position and velocity. A motor coupled to a sensor provides positional feedback, and a sophisticated controller can be used to move around parts of the system linearly or rotate at an angle. In this work, servomotor hasbeen employed for automating and controlling thepipeline's motor valve [9].

2.3 Software Components

- Virtual private server (VPS):Also called VDS or virtual dedicated server, it is a virtual machine (VM) that is

installed on a computer running multiple OS, but is perceived as a dedicated server by the user which serves to the individualuser's requests just like a separate dedicated computer would, providing the same functionalities and privacy with super-user privileges [10]. Multiple VPSs can be mounted on one physical server that can fill the gap between web hosting and dedicated hosting services.UsingVPS, any software capable of running on the OS can be installed by the user. In this paper, Ubuntu has been installed, which provides a distinctive user interface for the system and also supports various lightweight softwares.

- Bolt Cloud API (Application Programming Interface): It provides a communication interface among python programs, mobile applications and web server like third party systems and the Bolt devices[11]. For the Bolt devices linked to one's account, the cloud interface contains functions for monitoring and communication, intuitive controls, and utility functions. It uses HTTP protocol and its GET and POST methods for communication, allowing users to use conventional HTTP requests for programmatically accessing information from Bolt devices and executing. Some of the API's use cases include:
  - Usingit inAndroid and iOS (iPhone operating system) native apps to monitorBolt devices and control themthrough the Internet.
  - Pulling the collected sensor readings from Bolt devices to any cloud platform forcustom runninganalytics and AI algorithms.
  - ConnectingBolt Cloud to a VPS and running the program in any language.

Bolt APIs can accept and interface with both, either the host memory structures (like std::vectorорfloat* host array) or the device vectorfor allocation and management of the local device's memory for improved functioning [12].

- Bolt Library: Bolt interface is developed on the STL (standard template library) called Bolt which is designed to deliver high-performance implementations for scan, reduce, transform etc. common algorithms, optimized for operations on graphics processing units (GPUs). This C++ STL provides the benefit of customization of algorithms by users through function objects written in OpenCL™ (Open Computing Language) [13].

3. IMPLEMENTATION

3.1. Data Flow

The basic flow of operation in the smart irrigation system is quite simple and works efficiently towardswater preservation:

1. The water level is checked against thepre-defined threshold value.
2. If found to have exceeded the pre-set threshold water value, the system automatically closes down the water pumping valve.
3. This is followed by the activation of the servomotor which is attached to tank storing excess water.
4. The servomotor starts to work bypumping out the excess water back to the tanks to store and thus, avoid wastage.This way, a sense of sustainable farming and irrigation system is incorporated in the system, opening up opportunities for further other applications.
5. On selection of the auto-mode, this entire venting operation works automatically and helps achieve efficiency in its working.
6. If the water level on comparison is found to be less than the threshold value, the servomotor activates the water pumping from the water storage tank to the field/garden.

Figure 3 shows the flow of the system process, followed by the different scenarios that originate from it.

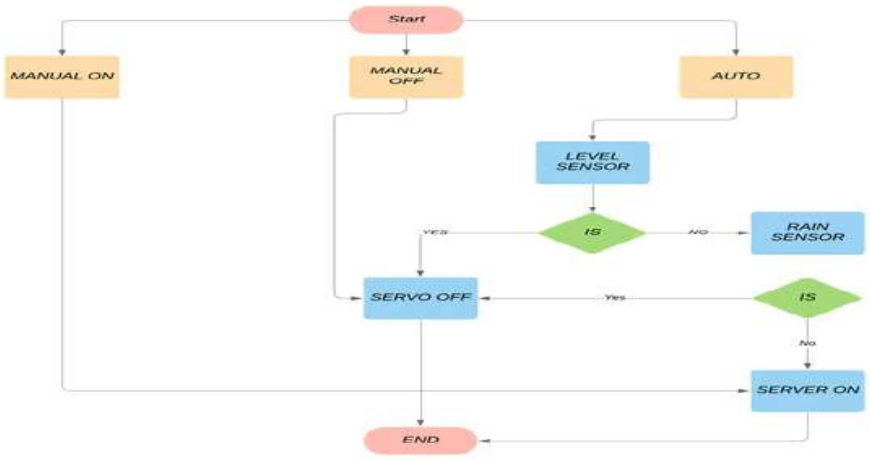

Fig. 3. Data Flowchart

Scenario 1:

Step 1: Start
Step 2: select Mode
Step 3: If MANUAL ON then SERVO ON
Step 4: End

Scenario 2:

Step 1: Start
Step 2: select Mode
Step 3: if MANUAL OFF then SERVO OFF
Step 4: End

Scenario 3:

Step 1: Start
Step 2: select Mode
Step 3: If Auto
Step 4: Select LEVEL SENSOR
Step 5: Is LEVEL SENSOR FULL
Step 6: YES
Step 7: SERVO OFF
Step 8: END

Scenario 4:

Step 1: Start
Step 2: select Mode
Step 3: If Auto
Step 4: Select LEVEL SENSOR
Step 5: Is LEVEL SENSOR FULL
Step 6: NO
Step 7: Select RAIN SENSOR
Step 8: Is RAIN SENSOR FULL
Step 9: YES
Step 10: SERVO OFF
Step 11: END

Scenario 5:

Step 1: Start
Step 2: select Mode
Step 3: If Auto
Step 4: Select LEVEL SENSOR
Step 5: Is LEVEL SENSOR FULL
Step 6: NO
Step 7: Select RAIN SENSOR
Step 8: Is RAIN SENSOR FULL
Step 9: NO
Step 10: SERVO ON
Step 11: END

Fig. 4. Possible scenarios in operation of smart irrigation system

The different scenarios possible throughout the working of the implemented smart irrigationsystem are shown in figure 4. They represent the different cases that originate when the used algorithms are employed in varying conditions, affecting the overall condition of the implemented system.However, whatever may be the case; the objectiveestablished remains the same, and is followed by the turning off or turning onof the servomotor, totally determined by the selected mode of operation (manual/automated) and the case that arises.

3.2. Algorithms

IoT ensures the connectivity among the components of the implemented system, but the sensor values also generate a lot of data, which needs to be properly handled as well as analyzed, for which the following machine learning algorithms have been employed:

- Decision Tree

It's a supervised learning algorithm, but unlike others, it can be used towards classification and regression related problem solving as well. The decision tree algorithm's objective is to create a ML model which learns simple rules for decision making from the input training data, and use those inferences to correctly predict the value of or the class to which the target variable belongs.Depending on whatkind of target variable is involved, decision trees can either be of the type categorical variable or the continuous variable type.

Class label prediction for a new record in decision tree algorithm begins with the root of the tree and as we move down the tree, every edge presents the possible answers to the test cases posed by each node, and comparisons are made recursively to sort down to some leaf node which provides the record's class label [14]. Figure 5 below shows the decision tree for an irrigation system wherein the water level, rain, temperature and humidity values are checked while descending through the nodes of the tree inorder to determine whether the irrigation valve should be closed or not.

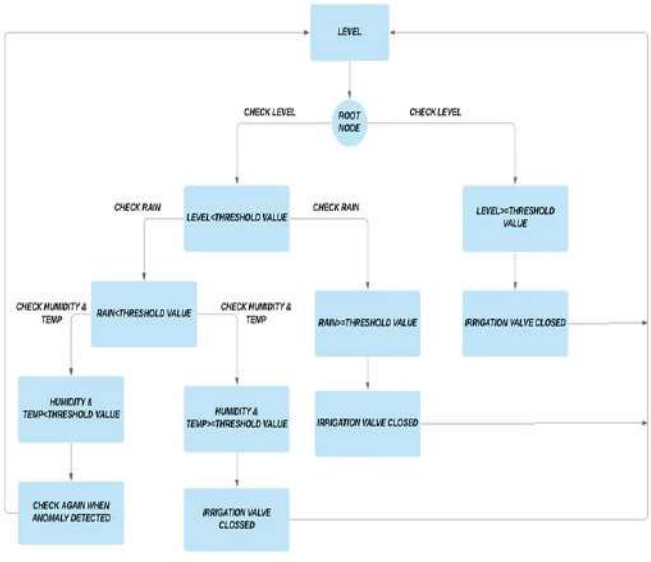

Fig. 5. Decision tree for irrigation system

- Polynomial Regression

A popularly used ML algorithm or technique of data analytics is using the Polynomial Visualizer, that aids in the modeling and fittingof a non-linear curve to a dataset. The obtained trend from the model can then be utilizedin understanding and accurately predicting the distribution of the other data points [15].The Visualizer provides support for deciding both-whether itis, in fact, the suitable method to adopt for the machine learning system, and if the visualizer does actually work for the given dataset, then what are the best possible parameters that canbe used with that model.

- Prediction Points: This count of prediction pointsdenotes the data points that are to be predicted by the Visualizer in the future.
- Polynomial Coefficients (C_n): The time-dependent data input to the Visualizer is processed to output the function's coefficients in the form shown in equation 1:

$$Data\ (t) = (C_n{}^{*}t_n) + (C_{n-1}{}^{*}t_{n-1}) + (C_{n-2}{}^{*}t_{n-2}) + \cdots (C_1{}^{*}t_1) + C_0 \quad \ldots \quad (1)$$

whichlooks like the input data trend most closely. This number indicates the value of n, i.e. the number of elements that are to exist in the function. 't_n' is the frame size which refers to the count of earlier data points which will be used by the Visualizer in predictingthe data's trend. For instance, $t_n$value of 5 indicates that the ML model will predict the data trend using the previous 5 data points.

- Anomaly Detection

It is the identification process for those values which differ from the norm, i.e. unexpected items or events in the dataset. Anomalies can be easily identified in graph visualizations using pre-defined threshold values. Figure 6 shows an example of existence of anomaly (the sudden peak value) in a data trend.

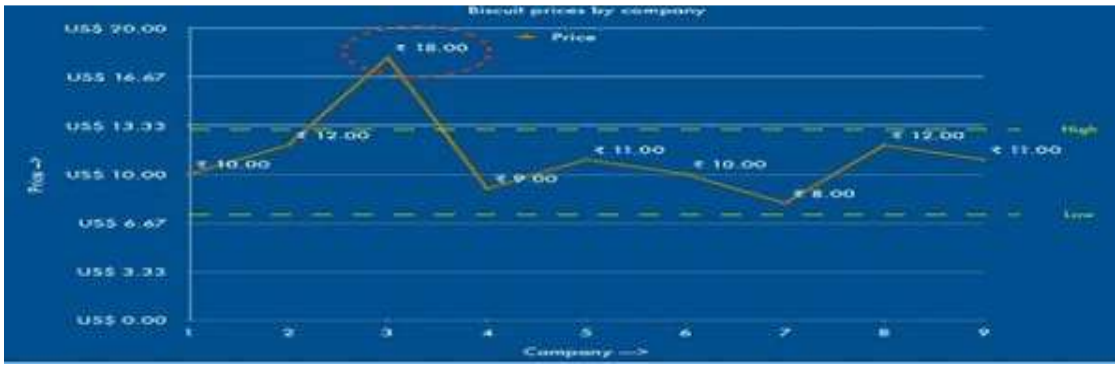

Fig. 6. Anomalies in a data trend

However, invisualizations where value of thresholds can't be determined, Z-score analysis serves as a useful for technique detecting anomalies in the dataset. Z-score is essentially used to compute limits i.e. the lower and upper bounds for the plotted input data.Equation 2 represents how this parametric measure is computed, along with the calculation of bounds [16].

$$M_n = \sum_{i=1}^{r} V_i / r$$

$$Z_n = C * \sqrt{\frac{\sum_{i=1}^{r}(V_i - M_n)^2}{r}} \quad \ldots \quad (2)$$

$$T_n = V_i \pm Z_n$$

where, V_i= input, M_n= mean, r = frame size, C= multiplication factor, Z_n= Z-score, T_n= bounds.Figure 7 shows an example of brightness levels in a room over time, with a set threshold value showing the bounds on the datavalues, which help in detection of anomalies.

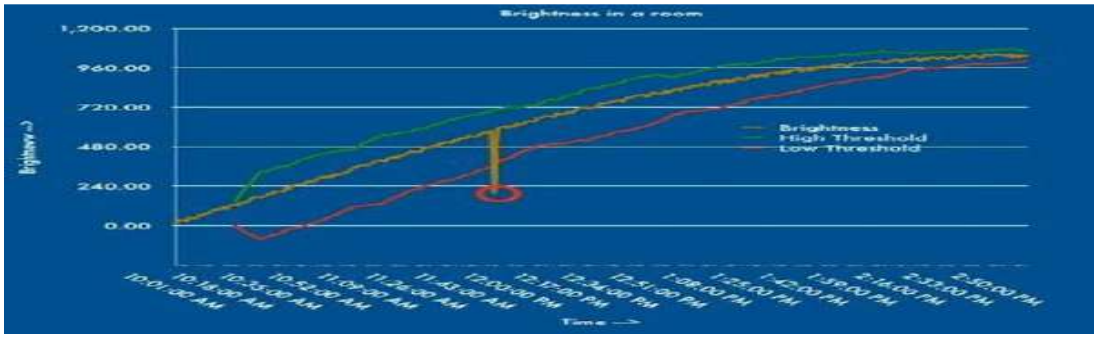

Fig. 7. Anomaly detection with bounds

3.3. Code

Figure 8 displays the snippet of pythoncode run on Ubuntu Server for the computation of Z-score and for detecting anomaly by collecting the data points (sensor readings) through Mailgun and sending mail to the user when an anomaly is detected.

```
while True:
    response = mybolt.analogRead('A0')
    data = json.loads(response)
    if data['success'] != 1:
        print("There was an error while retriving the data.")
        print("This is the error:"+data['value'])
        time.sleep(10)
        continue

    print ("This is the value "+data['value'])
    sensor_value=0
    try:
        sensor_value = int(data['value'])
    except e:
        print("There was an error while parsing the response: ",e)
        continue
    bound = compute_bounds(history_data,conf.FRAME_SIZE,conf.MUL_FACTOR)
    if not bound:
        required_data_count=conf.FRAME_SIZE-len(history_data)
        print("Not enough data to compute Z-score. Need ",required_data_count," more data points")
        history_data.append(int(data['value']))
        time.sleep(10)
        continue

    try:
        if sensor_value > bound[0] :
            print ("The light level increased suddenly. Sending an SMS.")
            message = "Light level increased suddenly."
            telegram_status = send_telegram_message(message)
            print("This is the response ",telegram_status)
        elif sensor_value < bound[1]:
            print ("The light level decreased suddenly. Sending an SMS.")
            message = "Light level decreased suddenly"
            telegram_status = send_telegram_message(message)
            trigger_integromat_webhook()
            print("This is the response ",telegram_status)
        history_data.append(sensor_value);
    except Exception as e:
        print ("Error",e)
    time.sleep(10)
```

Python Tab Width: 8 Ln 19, Col 42 INS

```
import requests
import conf, json, time, math, statistics
from boltiot import Bolt

def trigger_integromat_webhook():
    URL = "http://ipsaSdgo2c6oeibc84j7tppeohgbyxzh@hook.integromat.com" # REPLACE WITH CORRECT URL
    response = requests.request("GET", URL)
    print (response.text)

def compute_bounds(history_data,frame_size,factor):
    if len(history_data)<frame_size :
        return None

    if len(history_data)>frame_size :
        del history_data[0:len(history_data)-frame_size]
    Mn=statistics.mean(history_data)
    Variance=0
    for data in history_data :
        Variance += math.pow((data-Mn),2)
    Zn = factor * math.sqrt(Variance / frame_size)
    High_bound = history_data[frame_size-1]+Zn
    Low_bound = history_data[frame_size-1]-Zn
    return [High_bound,Low_bound]
mybolt = Bolt(conf.bolt_api_key, conf.device_id)
history_data =[]

def send_telegram_message(message):
    """Sends message via Telegram"""
    url = "https://api.telegram.org/" + conf.telegram_bot_id + "/sendMessage"
    data = {
        "chat_id": conf.telegram_chat_id,
        "text": message
    }
    try:
        response = requests.request(
            "POST",
            url,
            params=data
        )
        print("This is the Telegram response")
```

Python Tab Width: 8 Ln 19, Col 42 INS

Fig. 8. Python code for Arduino to function with Bolt

The server side analysis of various parameters, and the generation of results is implemented by the Python script:

- Using Bolt library, it collects data readings from the Arduino board havingthe IoT module.

- On acquiring the sensor readings, for carrying out further analysis, the dataset is imported.
- Decision tree algorithm is applied and using this dataset, the ML model is trained.
- Once trained, the ML model is tested for its level of accuracy.
- For predicting the output, i.e. deciding what decision/action is to be taken, the obtained new values are input to the ML model.

4. RESULTS AND ANALYSIS

Figure 9 shows the sensor values (data points) for the Z-score analysis to detect any anomalous values.

```
rahul@rahul-virtual-machine:~/Capstone$ sudo python3 temp_monitor.py
Reading sensor value
Sensor value is: 17
Not enough data to compute Z-score. Need  3  more data points
Reading sensor value
Sensor value is: 133
Making request to Mailgun to send an email
Response received from Mailgun is: {
  "id": "<20190822185548.1.F3975503F95B3CD0@sandbox665e2be88e08487da4d349c32db82284.mailgun.org>",
  "message": "Queued. Thank you."
}
Not enough data to compute Z-score. Need  2  more data points
Reading sensor value
Sensor value is: 3
Not enough data to compute Z-score. Need  1  more data points
Reading sensor value
Sensor value is: 2
Reading sensor value
Sensor value is: 21
Reading sensor value
Sensor value is: 31
Reading sensor value
Sensor value is: 9
Reading sensor value
Sensor value is: 18
Reading sensor value
Sensor value is: 6
Reading sensor value
Sensor value is: 10
Reading sensor value
Sensor value is: 43
Making request to Mailgun to send an email
Anomaly Detected  {
  "id": "<20190822185722.1.3FB5E7F0D73FAB4C@sandbox665e2be88e08487da4d349c32db82284.mailgun.org>",
  "message": "Queued. Thank you."
}
Reading sensor value
Sensor value is: 96
Making request to Mailgun to send an email
Anomaly Detected  {
  "id": "<20190822185733.1.0301CB10CF6F95F0@sandbox665e2be88e08487da4d349c32db82284.mailgun.org>",
  "message": "Queued. Thank you."
```

Fig. 9. Code snippet showing the sensor readings

Figure 10shows the temperature values over time, based on which Arduino will predict the temperature using ML model, according to which then the action of whether to irrigate the field/ garden or not is taken.

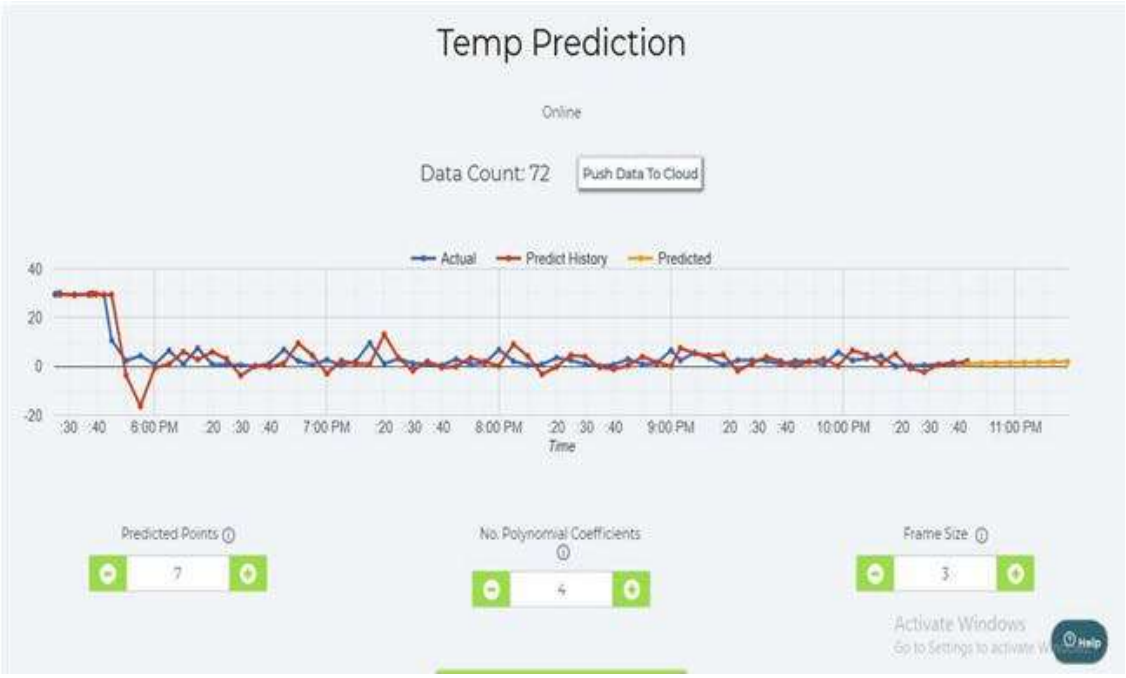

Fig. 10. Predicted values of Temperature over Time

The alert and control feature of the systemis implemented using Mailgun, which sends out mail alerts to the user whenever an anomaly is detected during Z-score analysis. This is very usefulas it providesthe user with real-time updates thatfurther affectswhatdecisions are taken and what operations are carried out with respect to water management in the field/garden. This anomaly is the detection of any sort of significant deviation in values below or above the pre-defined threshold values. This change is reported to the user through emails as well as Telegrammobile application, screenshots of which are shown in figure 11 [17].

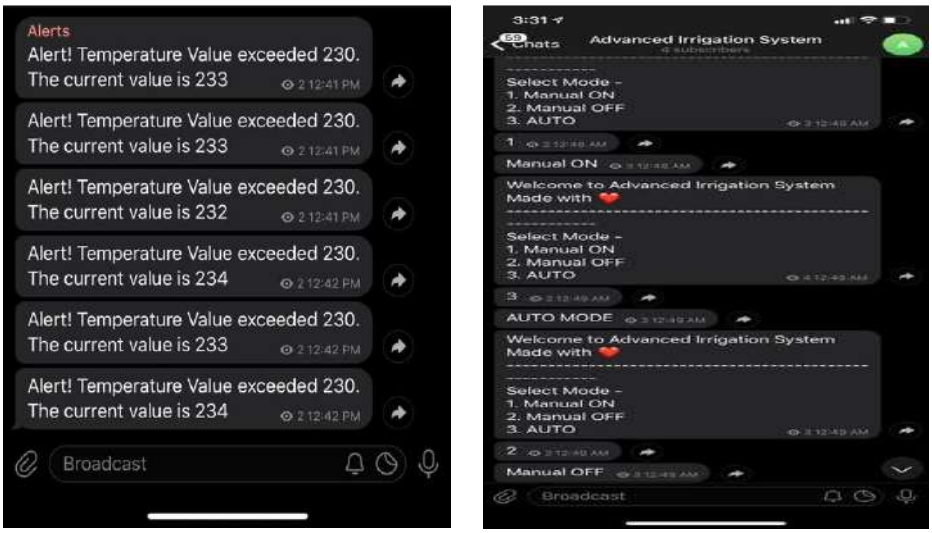

Fig. 11. Alerts through Telegram mobile application

5. CONCLUSION AND FUTURE SCOPE

In this paper, an IoT enabled smart system for facilitating automated irrigation control has been discussed. An implementation of the same on a sample garden has been executed using Arduino board, sensors for temperature, light and rain water level, Servomotor actuator and Bolt IoT kit. Polynomial regression technique of machine learning has also been employed to help predict parameter values for determining irrigation needs of the soil. This system tries to automatize the process of irrigating the crops and therefore help decrease the water wastage and overcome some of the challenges of traditional irrigation. The system implemented in this work gives an opportunity to achieve advanced automated controls such as that over the pump flow, and getting regular updates through the Mailgun alert system which notifies the user for any detected anomalies and prompts them for action through email as well as Telegram mobile app notifications. Further desired results may be obtained by using more sensors to take other parameters in consideration while decision making, and a different process flow based on employing additional machine learning algorithms for accurate predictions.

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Towards the Introduction of ICT in Digitalization of Entrepreneurship

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Abstract: The various emerging digital technologies has an important impact in the commerce and trading field. The presence of various applications in digital world has now provided a good opportunity for entrepreneurs to start a new e-commerce business and also to digitalize the existing traditional commerce. Information and Communication Technology (ICT) has played an important role in developing the digital entrepreneurship that enabled the easier and quick communication between organizer and the client. It would be significant to study how the ICT help the entrepreneur to enhance his market value. In this paper we will discuss the basics of Digital Entrepreneurship and the role of ICT in digital entrepreneurship followed by the various issues and risks related to ICT.

Keywords: Entrepreneurship, Digital Entrepreneurship, Traditional Entrepreneurship, Information and Communication Technology, Economic growth

1. INTRODUCTION

Digitalization has changed the working scenario drastically. It takes only seconds to communicate to the people sitting in other countries. It has been playing an important role in certain sectors, giving us opportunities to work from distant areas, at different hours, from the home, or wherever we want to. It helpsincreatingsocialandeconomicinclusion, which in turn is helpfulin sustainable development [1].When the public data is combined new technologies, it has been proved a blessing to us. For example, If we talk of climatic conditions, we are able to identify the risk associated with the climate and can take necessary step to avoid them.We get the information of inflation in advance so the market can take steps at right time which helps in maintaining Economic growth.

So, we can say that if we combine our business with the emerging technologies, it is of great significance for our social and economic growth. This association with the technologies has become possible with the use of Information and Communication Technologies (ICT). ICT is playing an important role in enabling digital entrepreneurship in every field, like it may be education, or agriculture or any other filed. In this paper we will further discuss in detail about digital entrepreneurship, ICT and its role in digital entrepreneurship and the issues related to it.

2. DIGITAL ENTREPRENEURSHIP

Entrepreneurship means to generate the new idea in your field of interest andtransformingtheseideasandopportunitiesintothe business[2]. It is basically is the ability to innovate new ideas and develop and organize those ideas to run a business enterprise, along with the risks related to it.

Digitalentrepreneurshipisasubsetofentrepreneurship inwhichdigitalmethods are involved for itsfunctioning.Hence, digital entrepreneurship is linked to digital business activities. Existing Traditional entrepreneurship can also be transformed into digital commerce or, business in order to increase the intensity of business.

In Contrast to the Digital Entrepreneurship, Traditional Entrepreneurship, requires the physical presence of the person at the time of trading. Below are the key differences between traditional and digital Entrepreneurship[3]:

- **Market Place:**
  - It is easier to attain a place in market in digital entrepreneurship rather than traditional entrepreneurship.
- **Storage:**
  - Production and storage of things is easier in digital entrepreneurship than traditional entrepreneurship.
- **Deployment:**
  - Deployment of plan is slower in Traditional one, whereas it is faster in digital entrepreneurship.
- **Workplace**
  - In case of traditional Entrepreneurship, there should be physical space for the business to occur, whereas in digital Entrepreneurship, we require only Digital workplace.
- **Contact Medium**
  - In traditional Entrepreneurship, Contact is done face to face whereas in digital one, contact is done through computer and digital technologies.
- **Organizational structure**
  - Organizational structure in Traditional Entrepreneurship is hierarchical, whereas in digital one, it is flexible and collaborative.

3. INFORMATION AND COMMUNICATION TECHNOLOGIES

Information and Communication Technologies (ICTs) is a superset of Information Technology (IT), in which includes all communication technologies like the internet, video-conferencing, wireless networks, smart phones, computers, software, social networking, and all the various media applications and services that enable users to retrieve, store, communicate, and manipulate information in a digital form.

ICTs helps us to combine media technology, for eg, audio-visual with computer networks, by means of a unified system of cabling or link system. However, various methods and tools that are involved in ICTs are steadily and rapidly evolving on an almost daily basis., so we can say that there is no unique definition of ICTs that explains the concepts of linking ICT with media technology.

If we talk of professional skills, various ICT professional education productshas been adopted by the IEEE Computer Society, for example, the Skills Framework for the Information Age (SFIA). There are various fields in which the importance of ICT strategies as a means of connecting the digital divide and as a powerful tool for economic and social development around the world plays an important role. For example, if we talk of agriculture sector, the Improving awareness of ICT services to farmers is improving thediffusion of global data for agriculture and nutrition that leads to the development of solutions which addresses food security, nutrition and sustainable agriculture issues. If we take the second example, IICT in education, it is the method of education that use information and communications technology to sustain, enrich, and improve the delivery of information. According to worldwide research, ICT can lead to an better-quality student learning and enhanced teaching methods[1].

4. ROLE OF ICT IN DIGITAL ENTREPRENEURSHIP

As discussed earlier, in the recent years, ICT is undergoing a quick development and has been presented into almost all fields of people's lives. It hasintroduced new opportunities for various businesses (e.g. education, agriculture), and better quality of life.Modern ICT tools can lead to decrease in the costs with increase in the productivity and efficiencyat the level of individuals and organizations. IT has also generateddrastic changes in the field of information and communication for the accessibility and availability of data or information. Development of ICT has lead to the efficient performance with greater success. For example, ICT helps us to test different decision making scenarios and gives us the best possible solution which is helpful in entrepreneurship. So, people uses ICT tool for building and developing entrepreneurial skills. Not only has this, ICT also offered various learning opportunities, database tools and business training opportunities with the help of business plan simulators[4]. ICT develops and enhances communication and social networks.

ICT has become an integral part in today's life. From the beginning of the day to the end, we are dependent on ICT, whether it's your food, clothing or travelling. In every field, we use ICT, for e.g., to pay bills online, to order food online, to get card recharged and etc. Information and communications technology (ICT) is have become an important evidence of the growth of technology in the world. The increase in smart phone accessibility has also increased exposure to the internet. The existence of mobile phones and the internet has given rise to new companies and hence providing jobs for many while also giving opportunities fr entrepreneurship and business models.

Some of the notable contribution of ICT in digital entrepreneurship includes; [3]

- **Easy Accessibility of Markets:** Due to the presence of E-commerce, the need for physical infrastructure is minimized for business to take place. Various Platforms, for, e.g., Jumiagive digitalentrepreneurs access to all over the world.
- **Virtual business coordination:** Technology has completely transformed the manner in which organizations operate today. These businesses use apps and generally do not require the physical existence of the business owner and can efficiently run virtually such as OLA.
- **Advertising and Marketing Communication:** With the evolution of ICT, we can be reach to the client with advertising messages via a tweet on twitter, through instagram, status on watsapp, etc at cheaper rates.
- **Increasing revenue:** ICT has provided various new opportunities to gain increase in revenue. Such opportunities may include the facility of providing movies and games at a lower fee. For example, Amazone Prime Video.
- **Saving Time:** We need not have to stand in a queue for the bill payment, or any of the bank transaction due to the availability of online paying system. E.g., Google Pay.
- **Money Saving:** There is no requirement of large physical workspace for digital entrepreneurship to occur due to the presence of ICT.
- **Web Conferencing:** It is an online service through which one can hold live meetings, conferencing, trainings via the internet. So, there is no need of people to be physically present at a single location. For, e.g., Google Meet.

5. ISSUES RELATED TO ICT IN DIGITAL ENTREPRENEURSHIP

- **Integration Issues**
    - As new technologies are introduced, sometimes they are not compatible with older systems or applications. This may result in malfunctioning of business. For e.g., double entry of data, have to look in multiple

places for information, and other inefficiencies. However, Good planning before implementation of business may be helpful in minimizing such issues.

- **Backup Challenges**
  - If you unintentionally deleted a file, or face a situation where you lose your data, then you must have reliable backup for data recovery.
- **Root Causes are difficult to trace**
  - Sometimes, it may take a long time to identify the inefficient working of business online as ICT is such a broader are that we can't trace the root cause easily.
- **Security Issues**
  - Security is a major issue of concern when we talk of digital world. It should be made sure that your personal and crucial data is not leaked or accessed by the unauthorized person which is harmful for the business growth.
- **Lack of Planned Infrastructure**
  - Sometimes lack of planned infrastructure may lead to decline in business. For e.g., If your business id not capable of adapting the new technologies, then it may be harmful in expansion of your business.
- **UnsatisfiedEmployees**
  - It has been observed that some business requires face to face physical existence to run efficiently. ICT can provide better tools for that purpose. Because of this, employees are not able to wrok efficiently and may result in their frustration. For e.g.: In field of education, a face to face lecture delivery is better than online delivery.

6. CONCLUSION

Digitalization has changed our concept of economy as it has enabled the economy with noboundationsof and space because of ICT. It has been proved of greater advantage for economic and business development that enables trilllions of transactions in an easy and fast way.ICT is one of thepliiarsof economic development which is beneficial at the national level. If we talk of ICT in Digital Entrepreneurship, it has played an important role in starting a new business and taking it to another level. To quote an example of ICT in Digital Entrepreneurship, there is a group of students who has started their business of making tiles from the carbon present in the air pollution. This has been possible with the combination of ICT and Digitalization.

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Skilling and Re-skilling Yourself during the Lockdown Period

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Abstract: Due to the COVID-19 pandemic throughout the globe, the world has come to a still to prevent humanity from the disease. So, everyone has been made to stay under their homes. As the period of lockdown is not so small, so why not we develop a new skill within ourselves or re-skill ourselves so that when the lockdown finishes up, we are back to the track with a change in ourselves and with a new level of self-confidence within us. Whether you belong to any of the field/profession, there is something available for you over the internet. Some of the most popular websites are Udemy, Udacity, Coursera, YouTube, Skill Share, and a lot many more. You can also attend various webinars being conducted by different institutes throughout the globe. The main aim behind this is not just learning up something new but also giving up a boost to your self-confidence so that when the next time to meet your friends, colleagues they find you with a new energy in you.

1. INTRODUCTION

Due to the uncertain situation caused during Covid-19 pandemic, world's population had spent several months at home. Enormouspeople shifts to refresh their current skills and build new ones. We all have seen that due to the worldwide lockdown, we all have to stay at our home. And the lockdown period is not so small, so there a definite chance that once the lockdown period is over, the needs of the time will change. So, to fulfil that need, it is our duty to skill ourselves so much that when the lockdown period is over, we are back to work with something new is ourselves. A change in our working style, a different attitude, a different level of self-confidence, and a boost in our energy levels are few examples. In order to achieve that we must skill ourselves with a new set of tools and technology or we can say that we should keep re-skilling ourselves as these are the most important things.

The reality of the times we live in has created the "big moment" for learning. Never before did transformation drive "digital learning" like the moment we all find ourselves in. As more gears shift, we will see a rapid transformation in this space as new models, methods, and processes upend the learning ecosystem. The most wonderful thing about human beings is that they keep growing and developing for a better future.

2. CHALLENGES IN SKILLING / RE-SKILLING

Developing a new skill sometimes seems to be less challenging than re-skilling yourselves because when we develop a new skill it's very easy to learn and grasp a new thing in our mind. Whereas when we have to re-skill ourselves it is quite difficult for a person to realize that the tools and technologies in which he was skilled up have been out-dated. So, now it's the need of the hour to keep re-skilling yourself.Whenever one is asked to develop a new or to re-skill themselves, two big questionscome to our mind. Firstly, "*What to do?*", and secondly, "*How to do?*".

Let's, look upon the first question which is "*What to do?*". This part is the trickiest and toughest part to do because there is a much greater number of things to do than you can ever imagine doing. So, what to choose? This could be done only by ourselves. We should start analysing ourselves. We must start digging up the dreams that we wished to fulfil, our hobbies that we wished to do but were unable to do, our passion that we wanted to follow but were unable to do due to some issues. We can also pick up a new hobby or activity that we have fantasized about, a new technology/tool that we wanted to learn from our field of interest, develop hobbies like book reading, art & craft, or any other thing that attracts you towards it. The main motive towards this skilling yourself is not only to learn something new but to also give a boost to yourself, your self-confidence and, your knowledge. So, that when you meet your colleagues or teammates after the lockdown period is over, they could find a new spark in you that fills you up with a new kind of energy.

Now, looking towards the question of "How to do?". Living in the current era of the Internet, this question seems to be useless to ask as we have a lot and a lot of resources to learn from. There are a lot of websites that are providing facilities to learn something new and improve yourself. Whether you belong to the field of Computers or Medicine or Business or any other field, there is something available for you as well. Some of the top websites providing these facilities includeEdX [1], Udemy

[2], Udacity [3], Coursera [4], Skillshare [5], FutureLearn [6] and MOOC [7] etc.

3. ONLINE LEARNING PLATFORMS USED WIDELY DURING COVID-19

Massive Open Online Course (MOOC) [7] provided many e-learning platforms like Edx, Udemy and Coursera [8,9] with numerous exciting features. Websites like Udacity and Courserado provide you certifications from various affiliated universities like Harvard, MIT, etc. and even some certifications are certified by the top giants of the time like Google, Microsoft, etc. Udemy provided courses on many topics including Data science which emerged as one of the top five topics users enrolled in.During this lockdown period many websites are even offering free learning courses for you if you only wish to learn but do not want a certificate. Due to Covid-19 pandemic, universities around the world had moved teaching and learning online. From the learner's perspective EdX and Coursera have similar functions and activities.These platforms check progress of student for assignment and testing for particular classes. Also find the lagging behind student at early stages and find errors in respective programs made by students. Student activity level as per time window and student achievements (marks and grades) are also available on these platforms.

Many universities displayed visionary leadership in championing digital learning with the Coursera for CampusResponse Program. Our Institute is registered for the program: Maharaja Surajmal Institute on Coursera [10]. 88 Students registered for the program from MSI – BCA department. Universities have shifted to a new era of digital transformation.Coursera can help universities to build and scale long-term digital learning solutions that suitable to their educational ecosystems.

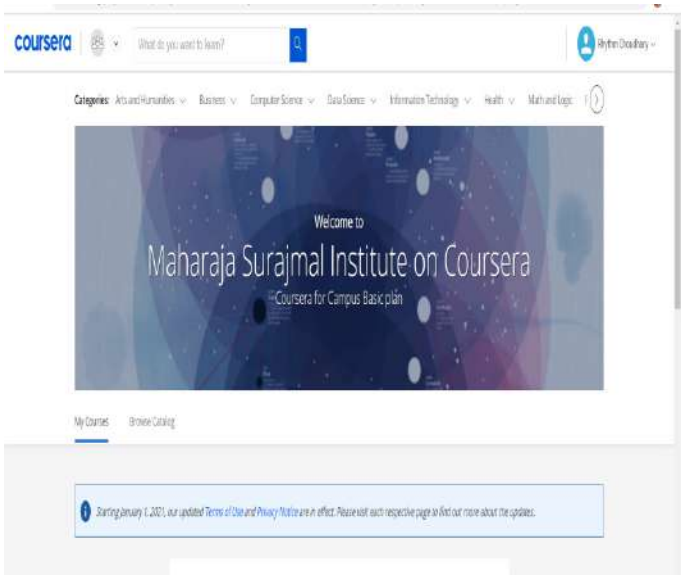

Fig. 1. Maharaja Surajmal Institute on Coursera

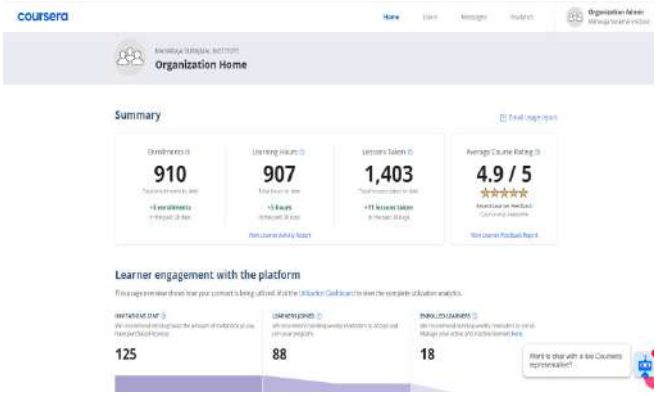

Fig. 2. Enrolments Summary on Coursera

Role of ICT Academy during Pandamic: For the betterment of students, faculties, and other personals many institutes and organizations are even conducting various webinars and online workshops. ICT Academy [11] organized various webinar sessions on its "Skycampus" series that coverd the technologies like Future of AI, Robotics Process Automation, VMWare Cloud, Cyber security Essentials, and many more. Various Learnathons were being organized that are providing a various set of online workshops to attend over the technologies like AWS Services, Cloud Computing, IoT, Deep Learning, and a lot more. ICT Academy have organized various VFDP, Power Seminar and

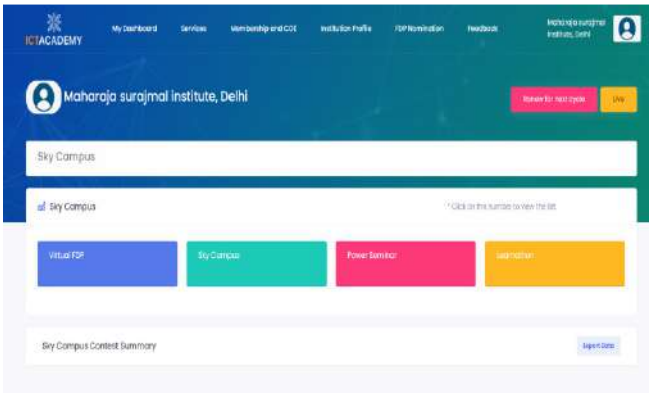

Fig. 3. Servicesprovided by ICT Academy

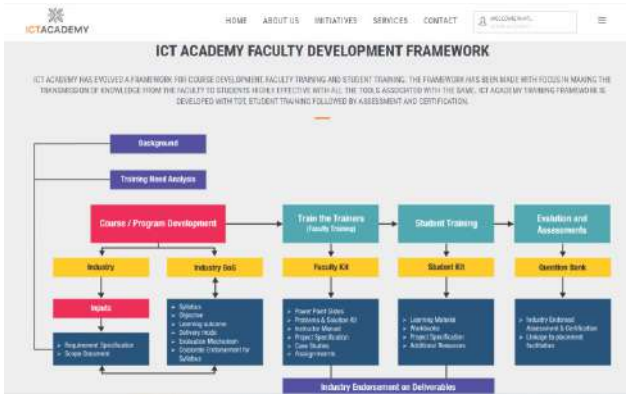

Fig. 4. ICT Academy FDP Framework

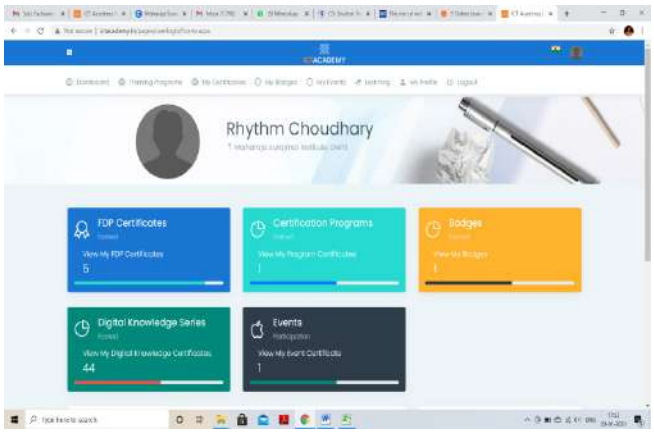

Fig. 5. Certificates and Badges earned by Faculty

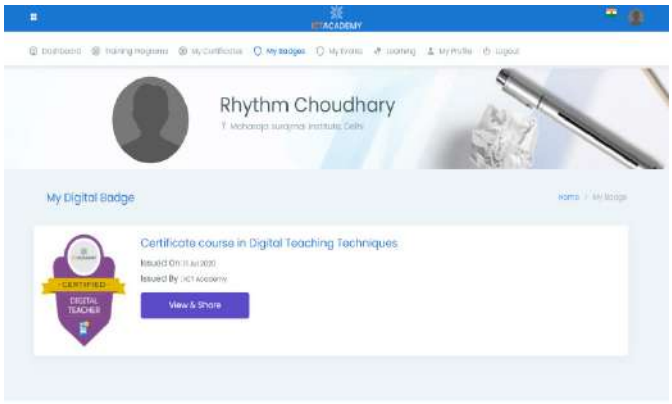

Fig. 6. Digital Badge for a course earned by Faculty

Learnathon 2020 for their member colleges. For Learnathon 2020 total 490 students have registered. Thirteen certification courses were provided by Automation Anywhere, aws, Salesforce, Mathworks, vmware, Cisco and Step. A lot of other skill development programs are being run by various organizations.

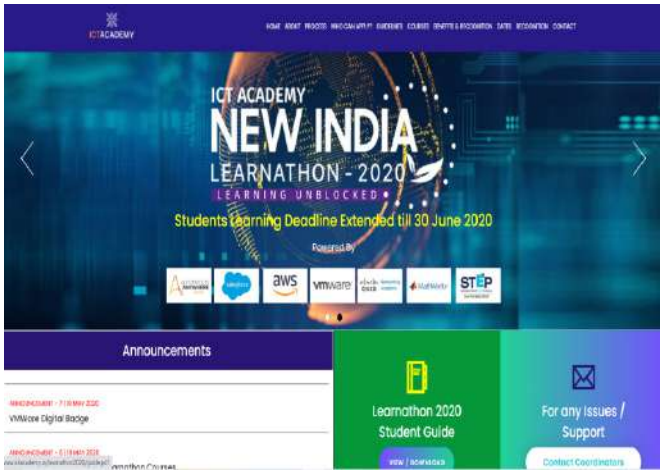

Fig. 7. Learnathon 2020

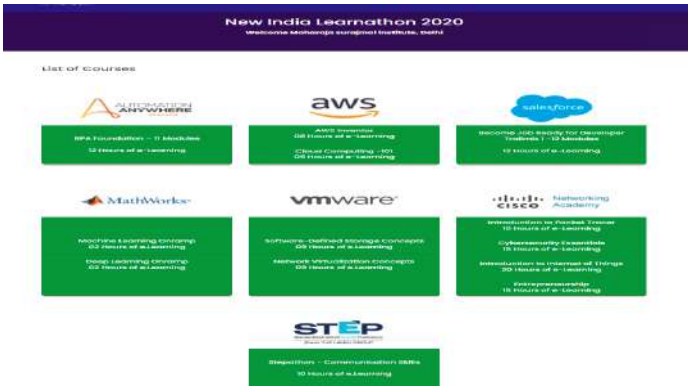

Fig. 8. Certification courses of Learnathon 2020 by Industry partners

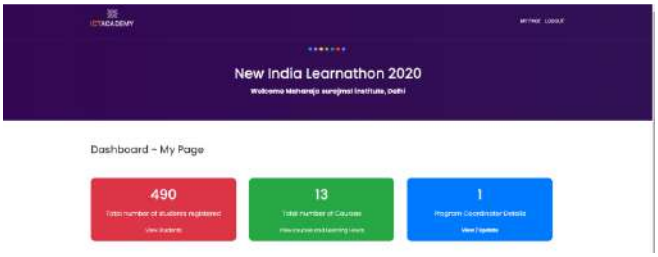

Fig. 7. Students Registrations for Learnathon 2020

4. CONCLUSION

As, the digital learning is on growth during this lockdown period which leads to participate for it.Major workforcedrifts towards online learning. MOOC platforms like Edx, Coursera, Udemyetc providing plenty of certification of courses for the learners. Learners are ready for skill enhancement and re-skilling for the future. Students and faculties have lot of opportunities by ICT Academy, Coursera etc.

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The Digital Economy: Challenges and Trends

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Abstract: ***The digital economy is a part of economic output derived exclusively from digital technologies with a plan of action dependent on digital goods or services. It is of increasing importance to developing countries. It covers all business, economic, social, cultural, etc., and so forth exercises that are upheld by the web and other advanced correspondence advances. Digital infrastructure is, to some extent, inadequate, excessive, and ineffectively performing. The broader digital ecosystem suffers from a human capacity deficit, insufficient funding, and helpless administration. The digital economy's growth exacerbates digital exclusion, inequality, adverse inclusion, and other digital harm. This paper overview the major technology trends necessary to enhance digital economy growth and its contribution to socio-economic development and facing the challenges in the new digital economy. In conclusion, although technological innovations represent a crucial breakthrough for society, they're also important countries' challenges.***

1. INTRODUCTION

The digital economy comprises of different segments, key among which incorporate government; strategy and guideline; web, the internet (WWW) and power foundation; telecommunication industry; digital service providers; e-business and e-commerce industry; information and knowledge management systems; intellectual property rights; human capital and knowledge workers; research and development; and emerging technologies. The worldwide digital economy is rapidly evolving, with the velocity of change driven by the vast quantities of data we can gather, utilize, and analyze. As per the World Economic Forum, "By 2025, it is estimated that nearly a quarter of global GDP will come from digital technologies such as artificial intelligence and cloud computing. " In digital consumer base, India is the second-largest in the world and is rapidly growing. The government's digital model narrows the digital divide and carries innovation to even the nation's most distant pieces.

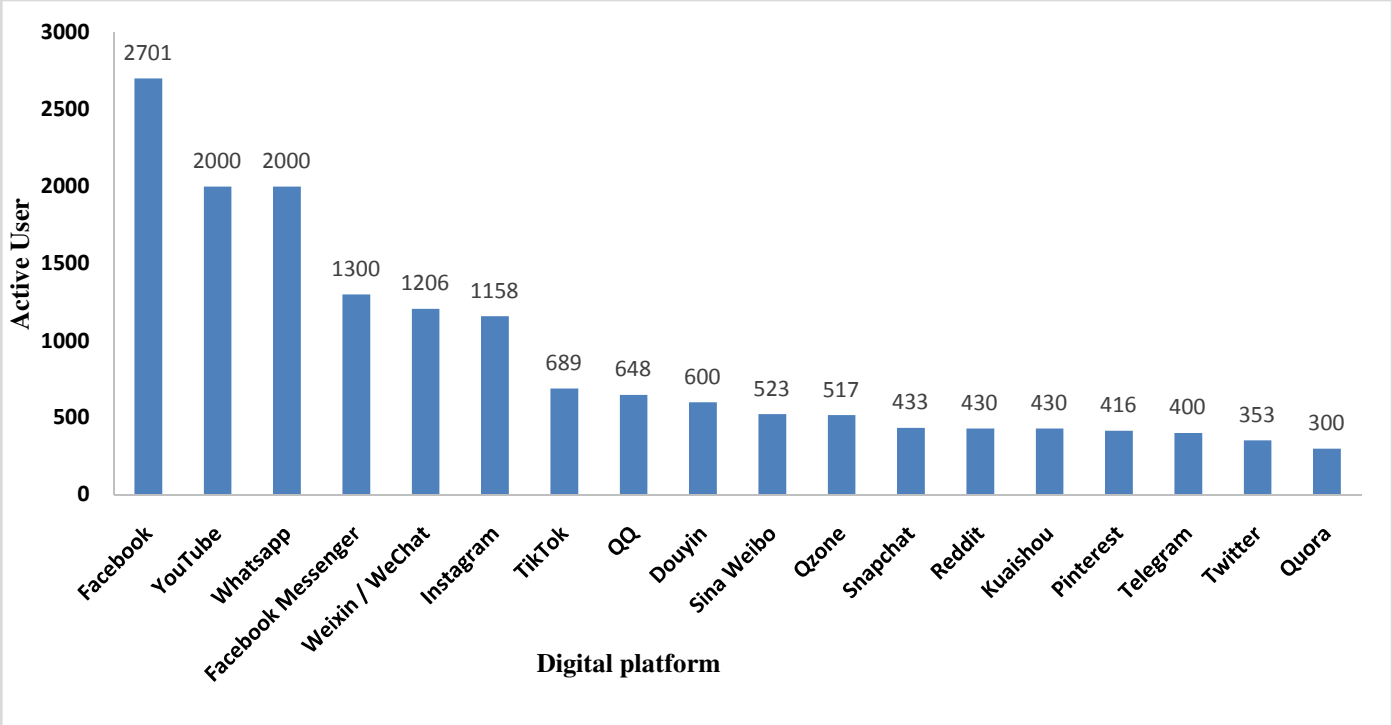

Fig. 1. Active users on digital platforms

Source: (https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users)

The progression in innovation over the previous decade has been wonderful, regardless of its electronic installments. These cell phones are more like handheld PCs, self-governing vehicles, the cloud, computerization, or the promise of artificial intelligence. Innovation assumes an important job in our lives from how we interface and impart either WhatsApp, Instagram, and Facebook. We consume entertainment through Netflix, Amazon Prime, and Hotstar also requests a taxi to Uber or Ola and experience healthcare through advancements such as robotic-assisted surgeries. Computerized advances are spreading worldwide faster than past rushes of mechanical development and are re-shaping business models and sectors (Dahlman et al. 2016). Digital economy firms have disturbed occupants across a wide scope of areas; with stage focused plans of action that have demonstrated exceptionally effectiveness (see Figure 1). Interruptions have happened in data search and sharing (for example, Google, Facebook, Twitter, Pinterest), individual administrations (for example, Uber, Airbnb), entertainment online (for example, Netflix, YouTube, iTunes), and shopping (for example, Amazon, eBay, Alibaba) among numerous others. Different work market stages have arisen that have empowered customers to discover administrations and laborers to secure positions across various nations (Monster, LinkedIn) or participate in gig work (Upwork, Samasource, Freelancer, Task Rabbit).

2. DIGITAL ECONOMY CHALLENGES

i) In terms of Human and Institutional Infrastructure

- In the digital economy, the demand depends upon active users' literacy rate, primarily on basic literacy, to use the technology and platforms. Secondly, on English literacy, as so much online content is in English and on digital literacy, it will allow them to use devices and develop an understanding and awareness of the internet's value for their daily lives. These skills are often lacking in many developing countries. Over 1 billion people in developing countries cannot read or write (Marcus et al., 2015).
- Finding the Expertise to Lead Digitization Initiatives takes a mixture of talent and technology to travel through your digital transformation. One without the opposite won't cut it. If your current systems hold you back, re-evaluate your technology partnerships and what they have to offer. The digital transformation will bring along its myriad of technical challenges, and you would like the proper people on board. Train your body of workers to be digitally literate and assist them in constructing talents required for innovation. By making early investments in your people, you can continue to be in advance of the recreation.
- This expanded grant, as a result of higher technological know-how, has a wonderful facet for consumers. It supplements existing competition thanks to the greater number and variety of goods and services offered and can also reduce the price. However, new agents' disruptive appearance can additionally lead to unfair opposition involving current carrier providers, which, in contrast to the new children on the block, have had to admire the policies related to security, safety, and fine requirements or achieve licenses o operate, amongst different issues. Technological innovation makes it feasible for new dealers to do business, and it is not possible (and no longer desirable) to avoid this completely. But they have to have to comply with some fundamental requirements, each at the beginning of the commercial enterprise (for example, following purchaser safety requirements) and carrying out the endeavor (for example, paying tax), and they have to function legally. The legislation also needs to adapt to the new business model and technological improvements.

ii) In terms of Technical Infrastructure

- Lack of cost-effective, available, and reliable electricity is a major obstacle to digital economy development (Kuek et al., 2015). Without electricity, of course, there can be no digital economy. Mobile phone companies have to install their power supply using diesel generators to keep base stations/mobile towers operational. These generators' operation – two are typically needed per cell tower – comes at a high cost to the industry (GSMA 2011). There has been tremendous progress in closing the digital divide in telecommunications infrastructure when it comes to basic (2G) mobile cellular signal availability (e.g., in rural areas). There is still a considerable gap between developed and developing countries in 3G and 4G cellular coverage (ITU 2014a). The shift to higher network connectivity is costly to implement for operators with little incentive to expand network coverage in low population densities, electrical supply issues, fragile security situations, and limited investment return.

iii) In terms of cost

- For instance, in developing countries, the average monthly fixed broadband prices are three times higher than in developed countries, and mobile broadband prices are twice as expensive (ITU 2015). So the issue of cost, accessibility, and availability is also an important challenge. But in terms of local incomes, bandwidth costs in low-income economies can be up to 100 times higher than those in the global North (WTO 2013). Such problems are exacerbated by tariff and tax policies that have seen ICT-related items as a reliable source of government income, leading to higher costs than in the industrialized world (Meltzer 2014). Given the basic laws of supply and demand, higher prices lead to lower diffusion of ICT infrastructure and devices, with evidence of usage being restricted, e.g., in Ghana (Taylor 2015). This not only hampers the general spread of the digital economy via individual users but specifically causes problems for digital enterprises (eBay 2013).

3. MAJOR TECHNOLOGY TRENDS IN THE 2020S

Digital reality, cognitive technologies, and blockchain are the descendants of experience, analytics, cloud, and the change agents of the coming decade.

1. Cognitive technologies, like machine learning, neural networks, robotic process automation, bots, tongue processing, neural nets, and therefore the broader domain of AI, have the potential to rework nearly every industry. Artificial Genius is solely in its infancy and the early stages of adoption, but machine learning is already being used to improve the customer experience by personalizing product recommendations. These technologies personalize and contextualize the human-technology interaction, allowing businesses to supply tailored language- and image-based information and services with minimal or no human involvement. And the retail giant, Amazon, has harnessed natural language processing power very different from any other with Alexa. Alexa can deduce what a person wants to say, and not just the words they say. Amazon says: "In short, it's what allows voice technology like Alexa to infer that you're probably asking for a local weather forecast when you ask, Alexa, what is the outside like? ?" As we discuss in ethical technology and trust, a corporation can help build a reputation as a trusted global brand by being transparent about utilizing cognitive technologies, evaluating the impact on customer trust, and proactively seeking to know and mitigate its effects data.
2. Blockchain is a decentralized database (ledger) of each transaction that has taken place within the chain. This database is shared over a computer network. Once a file has been introduced to the chain, it is very hard to trade as every chain carries—a hash's unique code. The creation of blockchain science has the potential to affect all industries. For example, it can help companies to know every product's status and condition in their supply chain. It can protect customers and companies from financial crime or help healthcare providers securely access and share personal health information.
3. Digital truth is a kind of science that digitally simulates fact in one way or any other throughout most senses. Digital actuality technologies, consisting of AR/VR, combined reality, voice interfaces, speech recognition, ambient computing, 360° video, and immersive technologies, promote greater herbal consumer engagement, seamlessly extending a human-centric trip past the confines of keyboards and screens. Systems are mostly visually based, but the field evolves into other technologies such as haptics (kinaesthetic communication). The goal is natural, intuitive, and potentially imperceptible interactions with underlying technologies. Digital reality is being used to enhance the consumer experience, from gaming and brand engagement to industry applications. For example, virtual reality is being used for training employees on the processes required in a manufacturing line. In contrast, augmented reality (which overlays digitally created content into the user's real-world environment) is being used by machinery-based industries for real-time maintenance, retail for visual searches, hyper-personalization seamless omnichannel functionality, and by the healthcare industry for 3D visualization of CT and MR images.

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Technology Driven Entrepreneurship

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1. INTRODUCTION

Tech entrepreneurship is an established concept in science. However new steps in context of digital entrepreneurship require revision and further development. The many possible combinations of technology and entrepreneurship have resulted in a variety of phenomena with characteristics and properties socio-economic impact. This article focuses on identification and description technological entrepreneurship in the age of digitization. Using current examples, it's important to describe the characterizations of technology entrepreneurship, digital technology entrepreneurship and digital entrepreneurship. With this new definition of terms, discussion between researchers, entrepreneurs and decision-makers on the effects of digitization on entrepreneurship becomes important and define a future research project.

An entrepreneur wishes to find all the ways to make money from a blog or website. You can sell ads, write sponsored content, or work with content partners. You can create an online store or use affiliate links to send your readers to someone else's online store. You can even create a subscription model that requires readers to pay to view your content.

However, none of these strategies will work if you don't have a constant flow of people to your website. For this reason, the first step to making money from your blog or website is to build an audience.

With the daily expansion of the World Wide Web, people generally rely on search engines to find relevant information. It is the duty of the search engine to provide the user with adequate and high quality information for the submitted query. The challenge is to provide relevant information using hyperlinks and website content in real time and to list them accordingly. Currently, Google is the most popular search engine which updates / launches its various algorithms to filter only high quality news content and hyperlinks. Google's algorithm change has generated a lot of guesswork as marketers worry about how it will affect their marketing efforts and overall business.

We follow the approach of MacInnis (2011) to identify and describe the characterizations of the concept and then determine and differentiate them implications dealt with practical avenues. First, we describe the different ones i.e types of technological entrepreneurship and their characteristics. On this basis, we propose a conceptual differentiation and discuss it.

Impact on researchers and entrepreneurs, committed to promoting technological entrepreneurship foresee new forms of technological entrepreneurship.

2. RESEARCHER

In traditional forms of technological entrepreneurship, main decision of the entrepreneur was the selection whether they aim to license their technology or get involved in the full marketing of their product. In contrast, digital entrepreneurs are integrated into a networked system when they are integrated. They want to commercialize their solutions. It is a context in which platforms and network effects play a role and standards or dominant ideas (Brem et al., 2016) can define this Product limits and scalability.

3. ENTREPRENEUR

The introduction of digital elements into technology has shown a good side for the entrepreneur. For example the digital aspects of Technology promote the adoption of ne-holistic approaches. These companies can quickly develop their products and target their customers with good publicity. In addition, the digitization of production processes enables them to be both lean and lean global company at the same time blurring the traditional boundaries of technological entrepreneurship. Activities in the entrepreneurship process offers digital technologies the ability to produce functioning prototypes early on which can be used in rewards crowd funding campaigns, completely change the process of managing technological innovations in the new company.

4. CHALLENGES

The lack of a detailed characterization of technical entrepreneurship makes it difficult to determine when we are still within the limits of the original concept. In their most recent systematic literature search, Ferreira and colleagues (2016) choose a broad one. Conceptualization of technological entrepreneurship suggests that it is a combination of entrepreneurship and technology-based innovation. Likewise Ferreira and colleagues wrote in their special issue on technical entrepreneurship that it is a type of entrepreneurship that aims to seize the opportunities it presents advances in science and technology. The two conceptualizations are broad and tend to agree Bailetti's approach (2012). This conceptualization has an unexpected challenge developed by the meaning of "technology". Even if many of the research on technical entrepreneurship has started by studying new entrants in the high tech industry.

Additionally, each of these types of businesses can respond to specific entrepreneurial motivations in their company founder. Some might be motivated by the idea of rapprochement-a social problem while others might be excited for the ambition to build a company that has iimpact and becomes a respected institution. These motivations can reflect a combination of several corporate identities or a certain dominant identity. The social identity of the entrepreneur behind each of these companies has an impact for the goals that they have set themselves, as well as for the exit routes that can be defined.

However, digital entrepreneurs expect to be able to sell and make their company a more important player, which translates into one and transfer the user base to a new company. Entrepreneurs in pure technology or digital technology are those technological assets that can be at the center of the interest of the acquirer or an expensive asset that the unattractive purchase price.

In the following section we would like to propose instructions on how to further explore technological entrepreneurship taking into account the various forms and shapes those digital technologies have sparked the implications for digital technology

The digital transformation of most of the entry-level technologies that entrepreneurs use to conduct their new innovative businesses has expanded the types of technologies that entrepreneurs we can observe. It's mandatory to have clear conceptualization between digital and technological entrepreneurship. Change in the meaning of "technology" as a continuum between the extremes presented by the commercialization of the latest scientific advances (e.g. Material like graph) and the latest application for Smartphone (for example a new app for the delivery of food)

As a result, the concept of entrepreneurship in digital technology necessarily combines elements of technology and digital entrepreneurship. Therefore we propose to expand definition of technological entrepreneurship to include specific aspects in this context that specific form of entrepreneurship: Entrepreneurship in digital technologies focuses on the identification and exploitation of opportunities based on technological knowledge through digital creation.

Digital entrepreneurs start businesses based on technologies on the one hand and on services on the other hand. The extension of the definition implies that this profile of entrepreneurs don't just take on challenges technical or scientific development, but also complex dynamics of digital platforms and infrastructures. The digital potential of tech entrepreneurship also has a downside. Fast and advanced growth for the ambitious, jumps often mean a higher risk of failure.

Digital entrepreneurs are entering emerging ecosystems in which the role of each actor is not yet clear and the technological base is still evolving. In summary, the digital artifact that is at the heart of entrepreneurship may or may not be required. But, information & management skills within the entrepreneurial team, opens new doors for acceleration and provides different type of growth.

5. CONCLUSION

The unprecedented digital revolution has changed the meaning and forms of entrepreneurship arena. The emerging field of tech entrepreneurship research couldn't keep up rapid changes in the digitization of our society and our economy. In this article we want to help entrepreneurs and researchers interested in further exploring the possibilities of new technology and entrepreneurship to produce. We propose a conceptualization and characterization of three different phenomena: Technology Entrepreneurship, Digital Technology Entrepreneurship, and Digital Entrepreneurship. Each of them has one different origins and dynamics of different origins, and in most cases they create very different growth and technological development paths.

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Digital Platform and Return on Investment

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Abstract: Digital Platforms has become inevitable in today's time not only to grow but to sustain and survive as well. Going digital / digital presence is the need of the hour due to ever changing technology and high tech savvy society & its citizens. Above it Covid-19 pandemic has made all the more a sort of compulsion to be "DIGITAL" Once our focus is on being digital, we should simultaneously analyze what ROI (Return on Investment) we are deriving for being digital so as to ensure cost effectiveness, enhance existing revenues by reducing costs and also to open new opportunities so as to make most out of it.

Keywords: Digital, Return on Investment, Strategy, Brand Awareness, Training, Development, Vanity Indicators, Site Traffic etc.

1. INTRODUCTION

A digital platform is the sum total of all exchanges of information, goods, or services between producers and consumers as well as the community that interacts with said platform. The central pillar in digital platforms is the community itself which is creating value for being digital.

- Social media platforms like Facebook , Twitter
- Knowledge platforms like , Quora, and Yahoo! Answers
- Media sharing platforms like YouTube,
- Service-oriented platforms like Uber, Urban clap

Return on Investment (ROI) is a performance measure used to evaluate the efficiency of an investment or compare the efficiency of a number of different investments. ROI tries to directly measure the amount of return on a particular investment, relative to the investment's cost. To calculate ROI, the benefit (or return) of an investment is divided by the cost of the investment. The result is expressed as a percentage or a ratio.

2. NEED FOR THE STUDY

Digital platforms are being used increasingly day by day and its usage has touched new heights in the present times of pandemic. Thus requiring a detailed study and analyze to know how much digital platforms are delivering in quantitative financial terms that is ROI.

3. OBJECTIVES

1. This paper analyze the role of being Digital for business houses
2. To know the return which Digital Platforms will earn on the investment.
3. To study possible types or forms of digital presence.
4. To identify the measures needed for the presence on digital platforms

4. DIGITAL PLATFORM & ROI

When we say digital presence and its associated return in financial terms, what this means for your digital strategy depends on your organization's goals (brand awareness, revenue, customer satisfaction, etc.). But in general, ROI on various digital platforms is the sum of all actions digitally that create value. After all the time, money and resources invested, what is the return? If your goal is to increase brand awareness, you measure success based on metrics as the target audience reach and commitment, not profit.

If you are not sure what to measure, ask yourself what kind of things your target audience did after exposure to your campaign. Were these actions in line with your goals? Where did they fail? How can they be improved for next time?

If you need a different way of looking at your ROI with regard to digital platforms, consider the relationship between revenue and costs, which includes things like

- Labor
- Training
- Development
- Digital technology
- Agencies and consultants
- Digital advertising budget
- Business overhead

To calculate the value of specific stocks (purchases, pageviews, downloads, registrations, etc.), use analytics to review what comes digitally. It will help you define your ROI for digital platforms and prove its value to your business.

5. ANALYSIS OF THE STUDY

How to measure the ROI of various Digital Platforms?

Step 1: Have clear goals

The brand awareness created through social networks (shares, likes, followers, etc.) is valuable, but not always sufficient.

Your social media goals can be based on:

- • Business transformations (such as customer acquisition or lead generation)
- • Brand awareness or perception
- • Customer experience
- • Safety and Risk Mitigation

Step 2: Set smart goals

Your purposes represent what digital platforms will aid to your organizational accomplishments. Once those are recognized you need to set goals, which characterize how and when you're going to achieve it. "If you need help setting goals, we recommend using the S.M.A.R.T. framework. Here, each goal must be specific, measurable, attainable, relevant, and timely. For example, instead of saying you want to improve customer service digitally, set a number and a deadline". For example: "We'll cut our first response time by 10 minutes by the end of the year."

Step 3: Track the right performance metrics

You need digital platform statistics to determine if you're hitting your goals or not.

So-called metrics like likes, comments, and shares get a bad rap, but they do have value. Use it to measure the overall health of your digital presence, measure yourself against your competition, and determine what content resonates with your audience. They should only be considered "vanity" indicators when they do not match your business goals.

"Other metrics you could track to prove ROI include:

- •Reach
- •Audience engagement
- •Site traffic
- •Leads generated
- •Sign-ups and conversions
- •Revenue generated"

Step 4: Know how much you are spending on digital platforms

You need to be clear about the size of your digital investment if you are to determine if you are getting a good return. There are four key elements that you will come back to.

Costs of tools and platforms

Most networks can be used for free. However, are you paying for a premium version of a digital platforms? For example, if you are measuring the ROI of a campaign that only lasts half a month; you should divide the monthly cost of the tool by two in your calculations.

**** Budget for being Digital***

This is the easiest to track because the cost of each digital platform may it be Facebook post or Instagram. When you run ads across multiple networks, manage each campaign seperately but measure ROI from a single platform for the organisation as whole.

Content creation

How much did it cost to create the documents you shared digitally during a given campaign? Also take into account any meetings (or parts of meetings) that were used to brainstorm and create the content.

Time spent by employees responsible for Digital Platforms

How much time does your team spend on Digital Platforms? Add everything from meetings to creating and promoting content to running ads. You can do this for a period of time to determine the ROI of a campaign or to calculate how much time your business spends digitally each month or year.

Once you've added all of the above, you can measure them against the goals and actions you committed to in steps two and three.

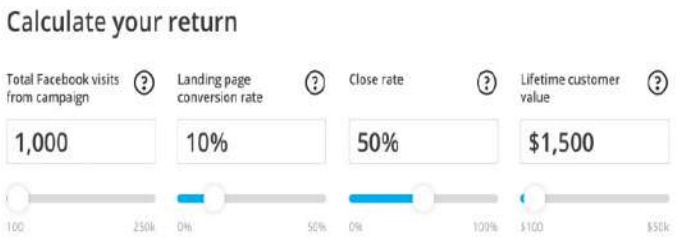
So if you are using various digital platforms to drive traffic to your website and, for example, support the business goal of increasing your brand awareness, you can use a formula to work out the cost of each visit.

"Profit" (in this case website visits via digital mode) / total investment (people hours, ad budget, etc.) X 100 = ROI (as a percentage)

*Digital Platforms ROI tools

Now that you know the theory behind measuring ROI with regard to Digital Platforms, you'll need the right tools to actually do it.

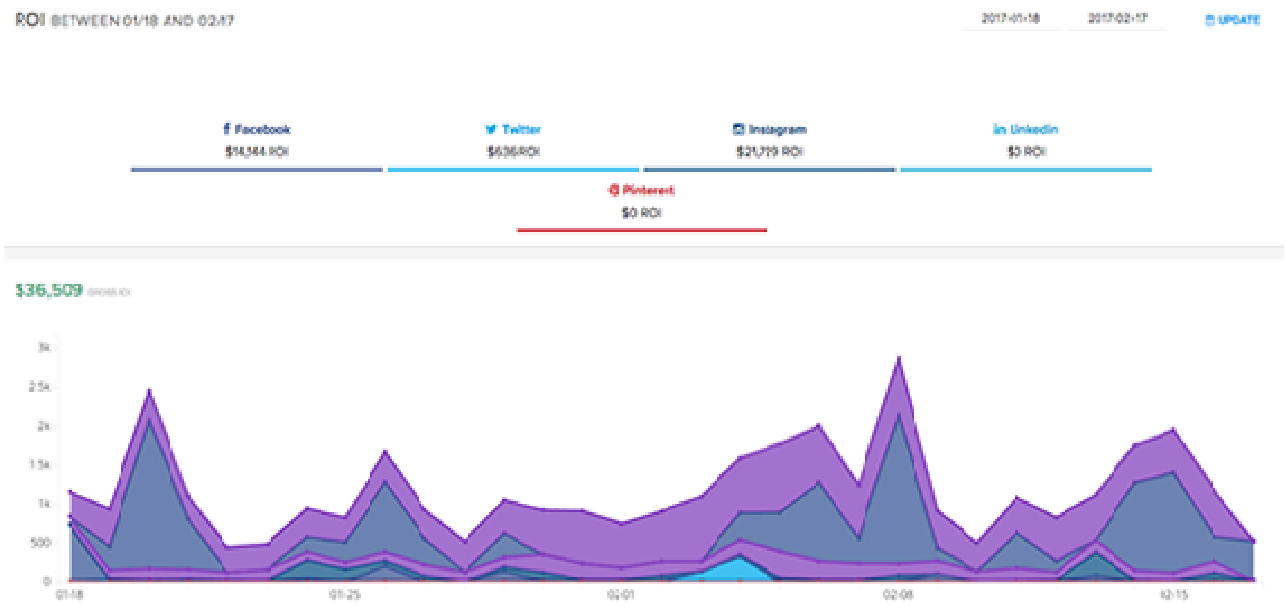
*ROI calculator for Digital Platforms: This tool makes it easy for you to calculate the return on your digital platform investment.



*Google Analytics: Track website traffic, conversions, and sign-ups from digital platforms.

*Hootsuite Impact: Measure the ROI of digital presence across paid, owned, and earned digital channels.

Impact connects to your existing analytics systems so you can integrate digital data with the rest of your business metrics. It makes producing reports easy, and delivers plain-language recommendations to optimize your digital strategy.



*Facebook Pixel: A piece of code for your website that allows you to track conversions from Facebook ads—everything from leads to sales. You can use the pixel feature within Facebook's own ad platform or with social ad optimization and targeting tools like Hootsuite Ads.

*UTM (URCHIN Tracking Module) parameters: Add these short text codes to a URL to track important data about website visitors and traffic sources. UTM parameters work with analytics programs like Google Analytics. They give you a detailed picture of your digital platform success, from a high level (which networks are performing best) down to the granular details.

*Hootsuite Insights: Will help you identify conversations and trends within your industry, reach, brand sentiment, and more. It's all backed by 100 million data sources, real-time results, and an easy-to-use interface.

Therefore to understand what the ROI is with regard to digital platforms, we should be very clear about the Key Performance Indicators (KPIs) and the goals of the organisation as a whole. Some of the important KPIs for digital platforms are as under:

1. General Performance - Traffic, leads, Reach
2. Channel Based - Website, blog, social networks, search engines
3. Source based performance - Direct traffic, Organic search, referrals, email.
4. Campaign based performance - Lead generation, click throughs, conversions, conversion rates.
5. Setting realistic and measurable goals.

6. CONCLUSION

Thus it is concluded that digital platforms were, are and will be of great import in times to come but it is necessary to change the KPIs over time and the goals too with changing requirement and need of time. Definitely it is opening windows of opportunity world wide for the business organisation by making digital platformsmore rather the most useful, informative and interactive. And here lies the beauty of being "Digital", being "Successful" & being "Relevant".

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