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ANNUAL PEER REVIEWED JOURNAL OF JAGRAN INSTITUTE OF MANAGEMENT

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INNOVATIONS IN BANKING SECTOR IN INDIA

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ABSTRACT

Technology has made banking clients live in a connected environment with higher expectations from their financial services providers. Fuel growth has been seen in the banking sector with the emergence of innovation in India. The banking challenges of evolving requirements and customer insights, new rules, and the development of more innovations for bank customers. This paper aims to present innovation in India's banking sector. This paper identifies bank products such as mobile banking applications, customer authentication, EFT, RTGS, NEFT, online banking, ECS, ATM, SMS banking, digital payment, biometric technology, etc.

Keywords: Banking sectors, Innovation, Digital Payments, Financial Services.

1. INTRODUCTION

Financial growth in the banking industry occurred after the nationalization of fourteen significant banks in 1969 and six banks in 1980. Banks are classified into four categories, i.e., commercial Banks, cooperative, Payment, and Small Finance Banks. Commercial Banks are further classified into Public banks and Private banks. Currently, thirty-four banks are working in India, of which twelve are public sector banks and the rest twenty-two are private sector banks. In India, the information technology revolution has had a significant impact on the banking system. The use of computers has aided the introduction of digital banking in India. Without information technology, Indian banks struggled to compete in customer service with foreign banks. The future of the Indian bank appears to be both exciting and revolutionary. By 2025, India's banking sector could be the world's third-largest. To continue evolving and expanding banking services, technology will make interactions with banks more multi-dimensional in the future. Indian banks have implemented technology-based solutions to increase revenue, improve customer experience, streamline cost structures, and manage organizational risk.

2. REVIEW OF LITERATURE

Uchupalanan(2000)conducted an association between information technology and competitive strategy. The analysis is based on a case study of five banking developments in the Thai banking industry. The author suggested the steps for creating a cohesive approach to innovation.

Jayakumar (2012) addressed significant changes in the Indian banking sector, concluded that banks need to restructure themselves, and defined the practices that need to be implemented.

Maithili(2014) studied the innovative business practices in the banking industry in India, described recent innovative banking industry practices, and concluded that new ideas, benchmarks, and forces are transforming the Indian banking industry.

Kaur (2015) examined the innovations in the banking sector at the national and international levels. The author concluded that technology would make bank interaction more multi-dimensional in the future and that Indian banks would continue to grow and expand banking services.

Capgemini (2016) studied the top 10 Trends in banking, intending to understand and analyze the trends expected to drive the dynamics of the banking environment shortly, and highlighted the growing propensity of banks to concentrate on innovation through leveraging new technologies.

Marous (2016) studied the retail banking trends, predictions for 2017, and the significant trends affecting banks and their services identified in 2017.

Dinceret *al.*(2020) explained the innovation policies for the European banking sector. The study was related to a comparative analysis of five gross domestic product European countries by using multiple criteria decision model. The study revealed that the comparative analysis of informative technology provides comprehensive results to select the best country in innovation policies.

3. OBJECTIVE OF THE STUDY

The study aims to highlight the innovations in India's banking industry.

4. RESEARCH METHODOLOGY

The focus of the study is on secondary data. Data is gathered from several sources, including documents, newspapers, bank portals, RBI portals, and online sources.

5. DISCUSSION

5.1. Innovations in Banking Sectors

Information technology has made banking more convenient, and the banking industry's future is dependent on technology. By embracing cutting-edge technology, India has ushered in a new age of banking innovation. Banks must continuously reimagine their businesses in today's digital age and hyper-connected world, and Indian banks are making tremendous strides toward true digital transformation. Some banking-related developments are described below.

5.1.1.ATM(Automatic Teller Machine)

The most common device in India is the automatic teller machine, which allows customers to withdraw money fifty-five weeks a year, twenty-four hours a day, seven days a week. It's a system that helps ATM cardholders to make everyday banking transactions without having to deal with a human teller. Checking balances, paying bills, moving funds between accounts, depositing money and cash into reports, and more can all be done with it.

5.1.2.POS(Point of Sale Terminal)

A POS terminal is a decentralized platform that contains a magnetically encoded plastic transaction card to identify the client to the computer and links to a bank's computerized client information files via the internet. The machine credits the retailer's account and debits the customer's account for the value of the purchase during a transaction.

5.1.3.Tele Banking

Customers may use Tele Banking to perform all non-cash banking transactions over the internet. Under the unit, the Automated Voice Recorder is used for simpler inquiries and transactions. Phone terminals handle complex requests and transfers.

5.1.4.Electronic Data Interchange (EDI):

Electronic Data Interchange is the digital exchange of business documents between trading partners in a standard, computer-processed, universally accepted format, such as purchase orders, invoices, shipping notices, and receiving advice. Financial data and payments can also be transmitted digitally using EDI.

5.1.5.Smart Watches

Smartwatches can be used to conduct banking transactions. It could be an Apple Watch, a Samsung Gear, or an Android wear device. Smartwatch apps have been introduced by some Indian private banks, including AXIS, ICICI, and HDFC.

Table 1

Smartwatch apps launched by Indian Banks

BANK NAME	Name of the smartwatch app
ICICI Bank	iwear
HDFC Bank	Watch banking

5.1.6.Real-Time Gross Settlement (RTGS)

In 2004, the Real-Time Gross Settlement system was introduced in India. It allows banks to send digital instructions to transfer funds from their account to another bank's account. The RBI maintains and operates the RTGS system, allowing banks to transfer funds more efficiently and quickly, easing their financial operations. The term 'Real Time' refers to the

fact that money is transferred between banks in real-time. As a result, money can reach the beneficiary immediately, and the beneficiary's bank has two hours to credit the beneficiary's account.

5.1.7.Electronic Funds Transfer (EFT)

Electronic Funds Transfer (EFT) is a mechanism that requires someone who wants to pay another person or business to go to their bank to make a cash payment or provide instructions/authorization for funds to be transferred directly from his account to the receiver/bank beneficiary's account. Full details should be given to the bank when requesting such transfers, such as the receiver's name, bank account amount, account type (savings or current account), bank name, city, branch name, etc so that the funds enter the beneficiaries' accounts accurately and efficiently.

Advantages of EFT

- Lower administrative costs
- Increased efficiency
- Streamlined bookkeeping
- Enhanced security

5.1.8.Electronic Clearing Service (ECS)

The Electronic Clearing Service (ECS) is a retail payment system that can be used to make bulk payments/receipts of a similar nature, especially where payment is repetitive and relatively small. Rather than individual funds transfers, this facility is designed for corporations and government agencies to make and accept vast amounts of payments.

5.1.9.The emergence of Payments Bank and Small Finance

The Reserve Bank of India has granted 23 licenses to new players, including two universal banking licenses (April 2, 2014), 11 payment bank licenses (August 19, 2015), and ten small finance bank licenses (Sept 16, 2015).

5.1.10Biometrics Technology

Biometrics is a form of technology that uses biological and behavioral characteristics to distinguish one individual from another. It is a secure and cost-effective approach for customer authentication. It relieves you of the responsibility of recalling passwords, PINs, and credit card numbers. IRIS Scan, Face Recognition, Finger Print, Voice Recognition, and other biometrics technologies are used in Indian banking. Customers benefit from its convenience, banks benefit from its operational efficiency, and transactions are safe.

5.1.11.Digital wallets:

A digital wallet is an electronic system or service that allows users to conduct electronic transactions. It's also known as an e-wallet or a mobile wallet.

Examples of digital wallets and UPI apps in India

- Paytm
- BHIM App
- Mobiwik
- Freecharge
- Phonepe
- State bank Buddy
- Oxigen
- Jio money
- ICICI pocket
- Payzapp
- Vodafone M-Pesa
- Lime
- mRupee

5.1.12. Artificial Intelligence & Robotics

The banking industry is investing much money into robotics and artificial intelligence. These robots are being used to meet the demands of today's tech-savvy customers. In one of its Mumbai branches, HDFC introduced intelligent robotics assistants. Customers are guided to various banking operations inside the branch by IRA. In 2016, ICICI Bank used software robots in 200 of its business processes. In November 2016, the Union Bank of India launched LAKSHMI, India's first banking robot. A chatbot is a computer program that uses artificial intelligence to mimic human communication.

Examples of the chatbot (Table 2)

Bank name	Chatbot
Yes Bank	Yes tag
HDFC Bank	EVA
ICICI Bank	iPAL
SBI bank	SIA

CONCLUSION

The study focused on banking innovation in India suggests that banks are ready and prepared to leap and deliver modern banking services and the foundations of a cashless economy. While most foreign banks embraced modern technology much sooner than Indian banks, some private Indian banks, such as Axis Bank, Yes Bank, ICICI, and HDFC, have taken the lead in innovative banking. As a result, public sector banks must update their technology to meet customer demand.

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Impact of Creative Accounting on the Credibility of Accounting Reports of Management

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Abstract:

The extent to which accounting reports and disclosures provide shareholders and other interested parties with reliable information to enable informed investment decisions and an effective valuation of firms remained in doubt. The alleged downfall for these relationships failing to live up to expectations was creative accounting. Most studies consider this practice unethical and should be discontinued, others admit that while it contributes to business failures, loss of investments and economic crisis, it is a necessary and legitimate practice. This paper assesses the extent to which this creativity has contributed to business failures, identifies the motivations for these practices and the challenges for true and fair reporting and transparent disclosure from management.

Results: The results differed from the results of previous studies. Accounting creativity has been found to be an understatement and contributes 90% to unfair reporting of the company's operations. The creativity in these practices is motivated by greed and is intended to deceive the public, potential investors and shareholders and increase the failure rate of businesses at a decreasing rate. However, the study revealed that numerous regulations without adequate controls, punishments and rewards complement creative accounting in providing the foundation for management's fictitious, aesthetic and unfair reporting.

Keywords: creative accounting, business, management, bankruptcy, unfair reporting, regulation, unethical.

1. The concept of creativity and creative accounting:

This section is discussed in two parts. The first part examines creativity as a concept. The second part examines the definitions and forms of creative accounting and the various practices that fall under those definitions. Consider the motivation for such practices. This is intended to provide a basis for evaluating the creativity and justification of accounting creativity. The theoretical framework is also provided in this section.

1.1 The concept of creativity:

More than 60 different definitions of creativity can be found in the psychological literature. Creativity is a process that involves the generation of new ideas or concepts, or new associations between existing ideas or concepts, and their concretization into a product that

has novelty and originality. From a scientific point of view, the products of creative thinking are generally considered to have both "originality" and "appropriateness". An alternative and more everyday conception of creativity is that it is simply the act of creating something new. Perhaps the most widespread conception of creativity in scientific literature is that creativity manifests itself in the production of a creative work (such as a new work of art or a scientific hypothesis) that is both "novel" and "useful". Colloquial definitions of creativity are typically descriptive of activities that result in producing or accomplishing something partially or totally new; investing in an existing object with new properties or characteristics; in imagining new possibilities that were not previously conceived; and in seeing or performing something in a different way than previously thought possible or normal. Creativity is also seen by economists such as Paul Romer as an important element in the recombination of elements to produce new technologies and products and, consequently, economic growth. Creativity leads to increased capital and creative products are protected by intellectual property laws. "Over the past decade, however, it appears that we have reached general agreement that creativity involves the production of new and useful products." Creativity can also be defined "as the process of producing something that is both original and useful" or "characterized by originality and expressiveness, imaginative, capital increase, results in economic development, added value to society and, in the long run period, positive consequences "

1.2 Accounting creativity: meaning, forms and practices in business management:

The term creative accounting is found neither in any accounting standard or regulation nor in the procedures for its explicit practices. The definitions under consideration are as judged by observers and professionals. "Any action by management that affects declared income and that does not offer a real economic advantage to the organization and could in fact, in the long term, be harmful (Merchant and Rockness, 1994)." "A process that involves the repetitive selection of accounting measurement or reporting rules according to a particular model, the effect of which is to report a stream of income with less variation from the trend than it would otherwise have appeared." The process of manipulating accounting data by exploiting gaps in accounting rules and the choices of measurement and reporting practices contained therein to transform financial statements from what they should be, to what editors would prefer to see reported, and the process by which transactions are structured to produce the required accounting results rather than reporting transactions in a neutral and consistent manner.

Creative accounting can be equated with information management in the sense of a targeted intervention in financial reporting processes. This practice has different names and forms in different countries. The techniques that define creative accounting are not new, but experience has shown that more often than not, they can prove to be extremely expensive.

To attract investors and appear profitable to shareholders, employees, creditors, suppliers, and other categories of stakeholders, companies may decide to falsify financial data. This practice has different names and forms in different countries. The techniques that define creative accounting are not new, but experience has shown that more often than not, they can prove to be extremely expensive. To attract investors and appear profitable to shareholders, employees, creditors, suppliers, and other categories of stakeholders, companies may decide to falsify financial data. This practice often leads to drastic consequences. These consequences arise due to six main areas of weakness or loopholes in accounting regulations and practices, namely, regulatory flexibility, lack of regulation, managerial leeway with respect to assumptions about the future, timing of certain transactions, use of transactions artificial and finally the reclassification and presentation of financial numbers. These areas are discussed in turn: Regulatory flexibility, accounting regulation often allows for a choice of policy, for example, in relation to the valuation of assets, business entities can, quite validly, change their accounting policies.

2. Research methodology:

This study adopts a descriptive and analytical survey / research design. The goal is to thoroughly examine related literature, collect primary data from practitioners, draw inferences on the subject through descriptive statistical analyzes of multinational companies, and assess the global influence of these practices on falsification of accounting reports and business failure. Eighty accountants were strategically selected for this study by several multinational companies. The sample size of 80 professional accountants in these firms was assessed based on their consent to participate in the study. The structured questionnaire is used for data collection with simple closed questions, multiple choice and open questions on the subject of study. The collected data is tabulated and analyzed using descriptive statistics. The data obtained are used in the validation of the research questions. The hypothesis is tested using secondary data. The number of failed businesses and the percentage of bankruptcies reported worldwide are used as the dependent variable. The proportion of creative accounting factors to the total factors contributing to the failure of a firm will be used as an independent variable to test the hypothesis. The research hypothesis is validated by regression and correlation analysis.

3. Data analysis and discussion of results:

Of all respondents, 42 per cent were women and 58 per cent men and all were qualified as a Professional Accountant. In total, 83.5% of respondents had more than 20 years of reporting experience, while 16.5% had less than 20 years of reporting experience. The demographics of the respondents reveal their wealth of experience and expertise in the study area. The responses obtained are organized to address the research objectives.

3.1 How creative are these practices in business?

In answering this question, we compare the qualities, characteristics and motivations of creativity with the concept of creativity applied in accounting. Let us first consider the motivations, secondly the originality, thirdly the unknown waiting and finally the positive economic consequences. First, various studies have examined the question of management's motivation towards creative accounting behaviors. The motivation for accounting creativity is negative and motivated by the selfish interest of managers to deceive shareholders and the investing public by saying that all is well or will be fine when in reality no one can be well. Another form of deception in this direction is called "big bath" accounting, in which a company that suffers a bad loss tries to maximize the loss reported in that year so that future years look better. A variant of income smoothing is to manipulate profit to relate it to forecasts.

Provide a boost when significant capital market transactions are expected and when there is a gap between the firm's actual performance and analysts' expectations and reduce the perception of variability in the firm's underlying economic earnings. This helps maintain or raise the share price by reducing apparent levels of debt, making the company appear less risky and creating the appearance of a good profit trend. This helps the company, a distressed company, raise capital from new share issues, offer its shares in a takeover bid, and resist takeover by other companies. If directors engage in "insider dealing" in their company's stock, they can use creative accounting to delay the release of information to the market, thereby increasing their opportunity to benefit from inside knowledge.

Another set of reasons for creative accounting, which applies to all companies, stems from the fact that companies are subject to various forms of contractual rights, obligations and constraints based on the amounts accounted for.

Second, the result of the accountants' creativity is not original, but a manipulation of an existing figure (the true and fair state) to produce an expected result (the false state).

Third, the expected state is a known outcome that is contrary to the defining characteristics of creativity. Finally, the long-term consequences of creative accounting are negative economic events that can transcend continents. Therefore, creative accounting is best described as a euphemism created by the greed of management and the bookkeeper at the expense of the economy. These are legitimate unethical practices on purpose and not out of ignorance or absence or inadequacy of rules and regulations.

The influence of this negative creativity:

- (1) Negative cash flow;
- (2) Capitalize expenses instead of canceling them;
- (3) Realization and increase of receivables or inventories with respect to sales;
- (4) Hide pension liabilities;
- (5) Consolidate income and equity of affiliates.

4. Conclusion and recommendations:

It seems clear that creative accounting is generally seen as a deceptive and undesirable practice. In this section, we analyze some measures that can help reduce the scope of creative accounting practices, identifying, where applicable, recent developments in International Accounting Standards. IAS will become the standard for all listed companies. However, we categorically state that more or more regulations will lead to more loopholes and better manipulations. The panacea lies in the determination of accountants and managers to do what is right. What is right must be determined by the long-term economic implications of such action.

Factors that complement the negative creativity of accounting:

Factors	No. of respondents	Relative Importance (%)
1. Lack of auditors independence	61	76.3
2. Greed by directors and compromised managers	78	97.5
3. Legal system that encourages inconclusive prosecution	54	67.5
4. Lack of discipline from professional bodies	78	97.5
5. Lack of professional ethical foundations	59	73.8
6. Poor understanding of theoretical underpinnings by practitioners	45	56.3

Source: Field survey

The timing of genuine transactions is clearly a matter of management's discretion. However, the scope of use can be limited by requiring periodic revaluations of accounting items so that gains or losses on changes in value are identified in the accounts each year as they occur, rather than appearing in total only in the year in question. where a divestiture occurs. Interestingly, the International Accounting Standards Board tends to lean towards fair value valuation rather than historical cost in several recent accounting policies and discussion papers. Instead of relying on regular audit committees to verify the auditor's independence, opposition-led committees should be created. These committees can act as informants, criticizing any activity that deviates from what appears normal and not in the interest of the company. This group has a chance not to be compromised. However, while not

compromised, opposition can play a vital role in securing accountability by reducing negative creativity by providing owners with adequate information for the decision to impose punishment.

To ensure the reduction of deepening of creative accounting practices, audit procedures should be proactive. Given the current status, the agent knows when the auditors will be invited. He has enough time to reorganize himself and the events around his operations. However, the proactive approach requires that the audit should and should not only be annual, it can be at any time of the year or even more than once. If owners are responsible for hiring auditors, such verification and investigation should be unannounced to the agent. Creative accounting is the root of numerous accounting scandals. It represents the transformation of accounting data from what conforms to economic reality into what managers want by exploiting the advantages of current legislation and / or ignoring some of them. The impact of creative or fraudulent accounting can be reduced not only by changes in accounting regulation, but also by correctly applying ethical standards and codes of governance in the corporate world. Regulation without in-depth enforcement techniques is likely to be ineffective in preventing individuals from using misleading reporting practices. The challenge of enforcing international accounting standards within a range of different accounting cultural contexts is likely to be problematic.

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Importance of Data Mining Tools in current scenario

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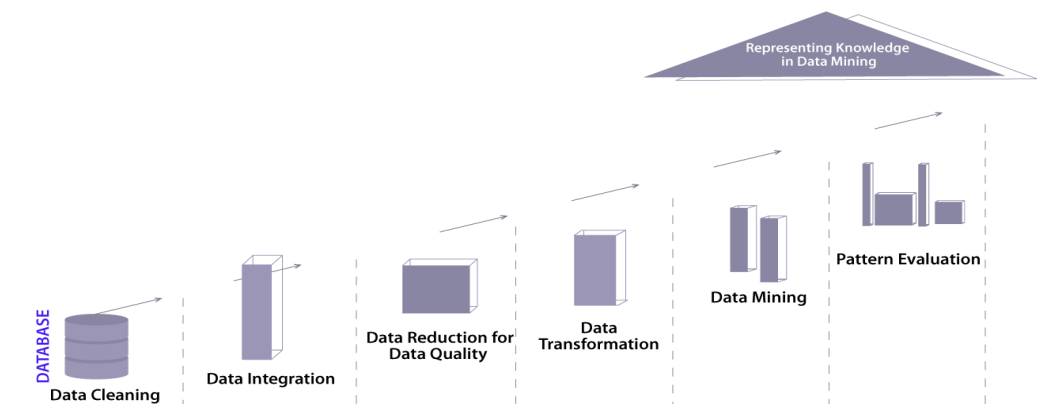
1. Introduction:

The method of extracting the useful information from the raw data is termed as Data Mining. It is a step-by-step process which including multiple tools to get information from the buckets or well of Raw Data. Data Mining is a technique, which interacts with large data sets to extract the prior information. In data mining the needy/useful data is extracted from the data-pool (data pool acts a source where multiple varieties of data is stored). Data Mining is a step-by-step process of analyzing hidden chunks of data into meaningful information which is stored in data warehouse.

2. Data Mining Steps:

As we already know the Data Mining is a process of Several Steps, the major steps can be:

-
- Data Cleaning
- Data Integration
- Data Reduction for Data Quality
- Data Transformation
- Data Mining
- Pattern Evaluation
- Representing Knowledge in Data Mining



3. Data Mining Techniques:

Today, the data mining has many techniques which are used in multiple places according to the requirement of an organization, to get the desired or actionable output from the raw data. Few of the techniques are: -

- Data cleaning and preparation
- Tracking patterns
- Outlier detection
- Classification and Association
- Neural networks
- Data warehousing
- Clustering
- Regression
- Statistical techniques
- Prediction and Decision Tree
- Long-term memory processing
- Machine learning and artificial intelligence

3.1 Data cleaning and preparation:

This technique is majorly to remove inconsistent, irrelevant or noise data from the Input Data Source to obtain the useful output form.

This technique is the first, necessary and basic which is used by most of the organization. The quality of data is depending upon this technique.

Data cleaning basically involves organizing, eliminating redundancy or corrupted data, and filling in any null values, and as this process gets complete, the most useful information can be harvested for analysis and prepared for the transformation and representation.

It includes different elements of data modeling, data migration, data transformation, ETL, ELT, data aggregation as well as integration.

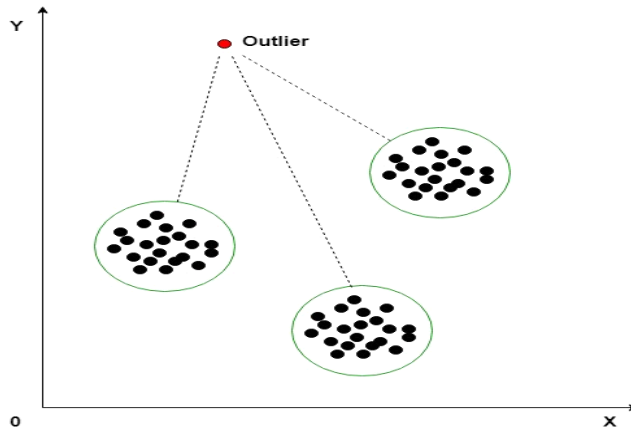
3.2 Tracking patterns:

It is also known as Pattern Recognition and Pattern Evaluation, and in data mining tracking pattern is primary technique, which is accepted by the companies which are depending on data representation and data transformation.

It works on pattern tracking on the input data source and as a result it returns desired Sets of Linked Terms or we can say that from the large datasets it describes the job of finding the most relevant and frequent patterns.

In a business model, once an organization determines a trend in sales data, that a particular product is having high sale rather than other for a particular demographic, then an organization can use this, to produce, create, manufacture similar services or products, or simply better managing stock the original product for these stats.

3.3 Outlier detection: Outlier detection is used to determine any exception in datasets. Once these exceptions are fetched in the data, then it is easy to manage, and after resolving this, it helps in further use and not to face the same issue or exception in future.

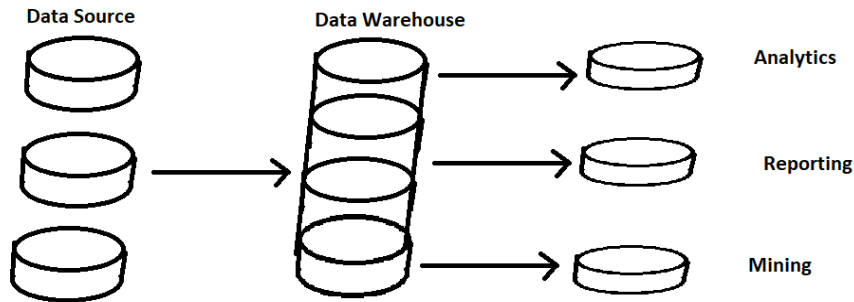


3.4 Classification and Association: Classification in data mining is used for the categorization of data type according to its type, class based on their attributes or properties, and as the data is defined into their sets or subsets it is easy to handle or manage.

The subset of data is associated or linked with another subset to create a Data set, and this association is a Data Mining Technique termed as **Association**. It works on Stats or Relational Data Queries. It represents that the certain data is linked to other data.

3.5 Neural Networks: Neural network is effectively used in data mining, to turn raw data into variable information. It works on Patterns in large batches of data and accepting it for further learning. This is why it is also used and a part of Machine Learning, so it can be said that it is a type of Data Mining Technique as well as Machine Learning Model. Neural Networks Is also used in Artificial Intelligence and Deep Learning.

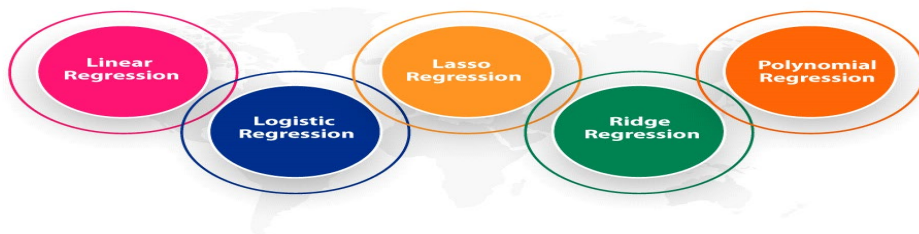
3.6 Data warehousing: Data Warehousing basically involves storage of structured data in relational database management systems so that it can be analyzed and used for reporting, business intelligence. It's a type of database management system which designed to perform and empower the Business Intelligence Activities which can be business analytics, data mining, data tools and infrastructure, data visualization and best practices to assist organizations to make more data-driven decisions. The data present in data warehouse is usually extracted, fetched or derived from a wide range of multiple data sources such as transaction applications or an application log files. Due to coherent and sensible dexterity or property, Data Warehouse allow organizations to derive valuable and important business insights from their data to improve decision-making and solve complex problems and because of this only a data warehouse can be considered an organization's "**single source of truth**".



3.7 Clustering: Clustering is grouping of a particular set of Data. Clustering mechanisms shows where the distribution or partition of data is in relation to different types of metrics by using graphs with the help of different colors to differentiate data distribution so that the user can determines what is relevant to their business modal and objectives. Clustering itself can be categorized into two types i.e., **Hard Clustering and Soft Clustering**.



3.8 Regression: It is referred as data mining technique which is used to foretell the numeric values and helps in determining the type of the relationship between variables in a dataset. These relationships can be contributive in some instances, or just simply coordinate or connect to others. Regression is divided into five different types Linear Regression, Logistic Regression, Lasso Regression, Ridge Regression, Polynomial Regression.



3.9 Long-term memory processing: It refers to the competency to examine data over long periods of time. Data Warehouses, stored historic data is very useful for this purpose. When an organization performs analysis on lengthy period of time, it is capable of identifying the patterns else might be too difficult to perceive or understand.

3.10 Machine learning and Artificial Intelligence: ML and AI represent some of the most advanced developments in data mining. Modern forms of machine learning such as deep learning offer highly accurate predictions when working with data at scale. AI and ML data

mining techniques are best for determining value from semi-structured and unstructured data sets.

The nontrivial extraction of implicit, previously unknown and potentially useful information from data can be done using AI and ML. Data Mining uses machine learning techniques to generate more accurate analysis.

Data mining is served as a foundation for artificial intelligence. Artificial Intelligence is an algorithm and sets of instructions with the information and data necessary. Few AI-based data mining algorithms are

- C4.5 Algorithm
- AdaBoost Algorithm
- CART Algorithm
- PageRank Algorithm
- k-Nearest Neighbors Algorithm
- Support vector machines Algorithm
- k-means Algorithm
- Expectation-Maximization Algorithm
- Naïve Bayes Algorithm etc.

Today three main methods are generally used in **Machine Learning** which are: -

- **Supervised learning** is one of the most basic types of machine learning. In this type of learning method, the machines are trained using the "labelled" dataset, and based on this training, the machine predicts the output. The labelled data specifies that some of the inputs which are already mapped to the output. It is also categorized as **Classification** and **Regression**.
- **Unsupervised machine learning** holds the advantage of being able to work with unlabeled data, means in unsupervised machine learning, the machine is trained by using the unlabeled dataset, and the machine predicts the output without any supervision. It is categorized as **Clustering** and **Association**.
- **Reinforcement learning** directly takes inspiration from how human beings learn from data in their lives. It can be said that this type of learning works on feedback-based process in which an AI agent (a bot or any application) automatically explore around's its by hitting & trail, taking action, learning from experiences, and improving its performance. It is also categorized as **Positive Reinforcement Learning** and **Negative Reinforcement Learning**

4. Applications of Data Mining:

Today data mining plays a very important role in versatile world, which helps in discovering the new ways in the behavior of consumers' group for consuming or utilizing the resources.

4.1 Financial Analysis,

4.2 Telecommunication Industry,

4.3 Intrusion Detection,

4.4 Retail Industry,

4.5 Higher Education,

4.6 Energy Industry,

- 4.7 Counter-Terrorism ,
- 4.8 Spatial Data Mining,
- 4.9 Other Scientific Applications,
- 4.10 Manufacturing Engineering,
- 4.11 Criminal Investigation,
- 4.12 Biological Data Analysis,

5. Choosing a Data Mining System:

Data Mining System is selected, on basis of the following features: -

- 5.1 Data Types,
- 5.2 System Issues,
- 5.3 Data Sources,
- 5.4 Data Mining functions and methodologies,
- 5.5 Coupling data mining with databases or data warehouse systems,
- 5.6 Scalability Visualization Tools,
- 5.7 Data Mining query language and graphical user interface,

6. Conclusion:

Data Mining is fetching information from vast and raw data which is present in Data Mart as an input. It is a step-by-step process and has their own methods. The data mining techniques are used on the basis of requirement and can involve more than one technique to get the desired result. Data Mining is a very useful technology used today to get higher profits by the Organization, because it generates the actual as well as accurate facts depending on the last records. The techniques of Data Mining are increasing day by day to produce more accurate output.

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Corporate Social Responsibility – Evolution

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ABSTRACT

Corporate social responsibility (CSR) is a buzzword worldwide. In today's globalized world, one of the biggest challenges faced which firms are facing is integration of CSR in business. Stakeholders require a lot more from companies than merely pursuing growth and profitability. CSR has come a long way in India and other emerging markets. From responsive activities to sustainable initiatives, corporates have clearly exhibited their ability to make a significant difference in the society and improve the overall quality of life. This paper focuses on the concept of CSR, its dimensions and relevance in emerging markets with special reference to India.

The concept of Corporate Social Responsibility (CSR) is not new in India. It emerged from the 'Vedic period' when history was not recorded in India. In that period. Kings had an obligation towards society and merchants displayed their own business responsibility by building places of worship, education, inns and wells. Corporate Social Responsibility has been defined and conceptualized in several ways during the past four centuries following a process of analysis, debate and scholarly confrontation around the theme. The concept 'Corporate Social Responsibility' (CSR) refers to 'soft', voluntary self regulation adopted by firms to improve Company aspects; this can relate to labor, environmental and human rights issues.

Key Words: CSR, Sustainability, Philanthropic approach, Stakeholders

Definition

Despite numerous efforts to bring about a clear and unbiased definition of CSR, there is still confusion as to how it should be defined.

Corporate Social Responsibility is about companies having responsibilities and taking actions beyond their legal obligations and economic/business aims. These wider responsibilities cover a range of areas but are frequently summed up as social and environmental - where social means society broadly defined, rather than simply social policy issues. This can be summed up as the triple bottom line approach: i.e. economic, social and environmental.

Corporate social responsibility (CSR) also called corporate responsibility, corporate citizenship, responsible business and corporate social opportunity is a concept whereby organizations consider the interests of society by taking responsibility for the impact of their activities on

customers, suppliers, employees, shareholders, communities and other stakeholders, as well as the environment.

According to **The World Business Council For Sustainable Development**, "Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large".

CSR is an offspring of business ethics. However business ethics is concerned particularly with moral values, while CSR focuses more on the social, environmental and sustainability issues than on morality. In the words of **A.P.J. Abdul Kalam** —Corporate decision making and policy making is linked to ethical values, compliance with legal requirements and respect for people, communities and the environment around the world. Corporate social responsibility is necessarily an evolving term that does not have a standard definition or a fully recognized set of specific criteria.

The Institute of Directors, UK (2002), —CSR is about businesses and other organizations going beyond the legal obligations to manage the impact they have on the environment and society. In particular, this could include how organizations interact with their employees, suppliers, customers and communities in which they operate, as well as the extent they attempt to protect the environment.

The European Union (2004), "A concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment, this is done by integrating social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis."

Christina Keiner (2008), "CSR, as a definitional construct, aims at describing the relationship between business and the larger society surrounding it, and at redefining the role and obligations of private business with that society, if deemed necessary."

Indian Scenario

The history of CSR in India has its four phases which run parallel to India's historical Development and has resulted in different approaches towards CSR.

The First Phase

In the first phase charity and philanthropy were the main drivers of CSR. Culture, religion, family values and tradition and industrialization had an influential effect on CSR. In the preindustrialization period, which lasted till 1850, wealthy merchants shared a part of their wealth with the wider society by way of setting up temples for a religious cause. Moreover, these merchants helped the society in getting over phases of famine and epidemics by providing food from their godowns and money and thus securing an integral position in the society. With

the arrival of colonial rule in India from the 1850s onwards, the approach towards CSR changed. The industrial families of the 19th century such as Tata, Godrej, Bajaj, Modi, Birla, Singhanian were strongly inclined towards economic as well as social considerations. However it has been observed that their efforts towards social as well as industrial development were not only driven by selfless and religious motives but also influenced by caste groups and political objectives.

The Second Phase

In the second phase, during the independence movement, there was increased stress on Indian Industrialists to demonstrate their dedication towards the progress of the society. This was when Mahatma Gandhi introduced the notion of "trusteeship", according to which the industry leaders had to manage their wealth so as to benefit the common man. "I desire to end capitalism almost, if not quite, as much as the most advanced socialist. But our methods differ. My theory of trusteeship is no make-shift, certainly no camouflage. I am confident that it will survive all other theories." This was Gandhi's words which highlights his argument towards his concept of "trusteeship". Gandhi's influence put pressure on various Industrialists to act towards building the nation and its socio-economic development. According to Gandhi, Indian companies were supposed to be the "temples of modern India". Under his influence businesses established trusts for schools and colleges and also helped in setting up training and scientific institutions. The operations of the trusts were largely in line with Gandhi's reforms which sought to abolish untouchability, encourage empowerment of women and rural development.

The Third Phase

The third phase of CSR (1960–80) had its relation to the element of "mixed economy", emergence of Public Sector Undertakings (PSUs) and laws relating labor and environmental standards. During this period the private sector was forced to take a backseat. The public sector was seen as the prime mover of development. Because of the stringent legal rules and regulations surrounding the activities of the private sector, the period was described as an "era of command and control". The policy of industrial licensing, high taxes and restrictions on the private sector led to corporate malpractices. This led to enactment of legislation regarding corporate governance, labor and environmental issues. PSUs were set up by the state to ensure suitable distribution of resources (wealth, food etc.) to the needy. However the public sector was effective only to a certain limited extent. This led to shift of expectation from the public to the private sector and their active involvement in the socio-economic development of the country became absolutely necessary. In 1965 Indian academicians, politicians and businessmen set up a national workshop on CSR aimed at reconciliation. They emphasized upon transparency, social accountability and regular stakeholder dialogues. In spite of such attempts the CSR failed to catch steam.

The Fourth Phase

In the fourth phase (1980 - 2015) Indian companies started abandoning their traditional engagement with CSR and integrated it into a sustainable business strategy. In the 1990s the first initiation towards globalization and economic liberalization were undertaken. Controls and licensing system were partly done away with which gave a boost to the economy the signs of which are very evident today. Increased growth momentum of the economy helped Indian companies grow rapidly and this made them more willing and able to contribute towards social cause. Globalization has transformed India into an important destination in terms of production and manufacturing bases of TNCs are concerned. As Western markets are becoming more and more concerned about labor and environmental standards in the developing countries, Indian companies which export and produce goods for the developed world need to pay a close attention to compliance with the international standards.

Corporate Social Responsibility -History

The concept of CSR has a long and varied history. It is necessary to trace evidences of the business community's concern for society for centuries. A survey of the literature on studies related to Evolution and Understanding of concept, Awareness, Motivation, Perception and Behaviour, Reporting Practices towards Corporate Social Responsibility Practices in Small and Medium Enterprises specifically has been made to identify the current status of research on the topic. The brief abstracts of these studies have been given below:

Priyanka Verma and Anupam Singh (2016)

Fostering Stakeholders Trust through CSR Reporting: An Analytical Focus” reveals that a true and sincere corporate communication leads to the building of stakeholders’ trust. It also assessed the extent and nature of CSR reporting by Indian companies. The results indicated that there is no significant relationship between a firm’s profitability and its corporate social disclosure (CSD). However, a firm’s ownership (private sector or public sector) has influence on CSD practices. The findings also suggest that firm size has a positive association with CSD under the community development theme. This implies that large companies with public visibility favour community development. Finally, the study ends with a conclusion that has strong managerial implications: sincere and honest social reporting can develop a better relationship with all stakeholders.

Sumona Ghosh (2015)

The study aims to explore the establishment of a pattern of participation of corporate social responsibility (CSR) activities amongst private sector companies as reflected in the respective company documents in the public domain, taking absolute profit as the parameter. The study showed that the most preferred CSR activities were education, health and environment. Drinking water and sanitation and urban upliftment were the least preferred activities.

Significant correlation was observed with respect to various CSR activities that the companies were responsive to. Companies belonging to the manufacturing sector and the diversified sector have shown the highest responsiveness towards such activities. Companies have attached the highest importance (Level 1) to the following CSR activities: education, environment, health, rural upliftment and others.

Shubhashis Gangopadhyay (2014)

The theoretical literature and empirical studies on CSR have systematically shown that CSR plays a significant role as an important part of a company's competitive strategy. Companies can compete by lowering prices without reducing the quality of the product, or by improving the quality without any significant increases in its price. Firms use their social activities as a signal to win over consumers who stay loyal to them and employees who prefer to work for them. However, such signaling works as a competitive strategy only if participation in such activities is voluntary.

Dr. M. Ramana Kumar (2013) in his study on CSR (Analysis of select Indian Private and Public sector companies) tried to analyze the CSR activities carried out by Indian Private (Reliance Industries Ltd.) and public sector companies (ONGC) and also study the Indian government policies and programmes of CSR. The study revealed that though the Indian public and private firms are making efforts in the CSR areas, still there is a requirement of more emphasis on CSR. The study found that there is a significant difference in the CSR practices of RIL and ONGC as the CSR budget of ONGC is more than RIL during the year 2009-10, 2010-11, and 2011-12 and average CSR score of ONGC is more than that of RIL during 2009 to 2013.

Brammer, Jackson & Matten (2012) study entitled as —Corporate Social Responsibility and institutional theory: new perspective on private governance in Social economic review depicted that CSR is not only a voluntary action but is beyond that. In this study, CSR has been defined under institutional theory. The institutional theory stated that corporate social activities are not only voluntary activities but are a part of interface between business and society. Regulation/governance are necessary for enhancing the corporate performance of businesses through CSR. The theory also suggested the form in which companies should take its social responsibilities; whether historical, political or legal form.

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RIL and ONGC as the CSR budget of ONGC is more than RIL during the year 2009-10, 2010-11, and 2011-12 and average CSR score of ONGC is more than that of RIL during 2009 to 2013.

Netaji and Amran (2012) their study aims to measure the perception of owners/managers of Small and medium-sized enterprises (SMEs) towards corporate social responsibility (CSR). It also seeks to examine whether ownership type causes any difference in the CSR attitudes of small firms owners. The findings of this study revealed that majority of Malaysian SME owners have a philanthropic view towards CSR followed by modern view. Besides, it was found that ownership type causes a significant difference in the perception towards CSR's cost/benefit between sole proprietorship firms and private limited enterprises.

Frisko and Arisandi (2011) have studied the practices of corporate social responsibility (CSR) run by state owned company in Indonesia which tends to focus on strengthening economies of small and medium enterprises (SMEs) through partnership program as per regulation framework.

The analysis included examining the background of program, assess its impact to stakeholder, and evaluate the effectiveness of social program done by state-owned company. Eventually, this study expected to provide information about effectiveness analysis of CSR programs for company and government to design proper rules in creating sustainability development for a better future.

Erli and Lasmono (2010) examine consumer perception towards CSR in the developing country Indonesia. This research produced mixed results, suggesting that CSR is still a concept waiting to be applied in the developing country. Consumers are often unaware and unsupportive towards CSR. This is opposite finding of consumer perception in developed countries where most consumers are willing to support CSR launched by corporations. Nevertheless, there is an interesting finding, when consumers have to buy similar products with the same price and quality, CSR could be the determining factor. They would buy from the firm that has a socially responsible reputation.

Sharma et al (2009) Business organizations have woken up to the need of being committed towards CSR. This study is an attempt to explore the engagement of human resource management professionals in undertaking CSR. It suggests Human Resource Management to take a leading role in encouraging CSR activities at all levels. The combined impact of CSR and human resource activities which reinforce desirable behavior can make a major contribution in creating long term success in organization.

Reich (2008) argues that the new interest in so-called "Corporate Social Responsibility" is found on a false notion of how much profits a modern public corporation has to sacrifice for the

sake of certain social goods, and that the promotion of corporate social responsibility by both the private

and public sectors misleads the public into believing that more is being done by the private sector to meet certain public goals than is in fact the case.

Porter and Karmar (2006) has studied the role of .Government, activists and the media that became adept at holding companies accountable for the social consequences of their activities. Many organizations rank companies on the basis of performance of their corporate social responsibility (CSR), and, despite sometimes questionable, these rankings attract considerable publicity.

Raynard and Forstater (2002) describe Corporate Social Responsibility as an increasingly important part of the business environment. The past twenty years have seen a radical change in the relationship between business and society. Key drivers of this change have been the globalization of trade, the increased size and influence of companies, the repositioning of government and the rise in strategic importance of stakeholder relationships, knowledge and brand reputation. The relationship between companies and civil society organizations has moved on from paternalistic philanthropy to a re-examination of the roles, rights and responsibilities of business in society. Corporate Social Responsibility (CSR), defined in terms of the responsiveness of businesses to stakeholders' legal, ethical, social and environmental expectations, is one outcome of these developments.

Carroll (1999) traces the evolution of the CSR construct beginning in the 1950s, which marks the modern era of CSR. Definitions expanded during 1960s and proliferated during 1970s. In the 1980s, there were fewer new definitions, more empirical research, and alternative themes began to mature. These alternative themes included corporate social performance (CSP), stakeholder theory, and business ethics theory. In the 1990s, CSR continues to serve as a core construct but yields to or is transformed into alternative thematic frameworks.

The study of literature on CSR and CSRD (Corporate Social Disclosure) paints an ambiguous and even contradictory picture in India as well as at global level. Though some studies can be found in India, but the work is certainly scanty relative to research work at global level. Overall, it has been concluded by most of the studies that the CSR disclosures are low, do not present social information in a consistent manner and social audit reporting in formalized accounting pattern are not being followed. Though size, profitability and industry have been found to be the determinants of CSD but the relationship seems to be moderate and inconsistent. So, a detailed investigation in CSD patterns in India and their association with various corporate characteristics is warranted. Moreover, the perceptions of various groups of stakeholders have not been investigated by earlier studies. So, it has been identified as an interesting area for the current research.

Legal Framework of CSR

The first formal attempt by the Government of India to put the CSR issue on the table was in the issuance of Corporate Social Responsibility Voluntary Guidelines in 2009 by the Ministry of Corporate Affairs (MCA, 2009). Prior to this, the importance of CSR was discussed in the context of corporate governance reforms, such as in the Report of the Task Force on Corporate Excellence by the Ministry of Corporate Affairs (MCA, 2000). It is in the Voluntary Guidelines of 2009 that the core elements of a CSR policy was spelt out that included care for all stakeholders, ethical functioning, respect for workers' rights and welfare, respect for human rights, respect for the environment and activities to promote social and inclusive development. The Guidelines specifically drew a distinction between philanthropy and CSR activities, and highlighted the voluntary nature of CSR activities that go beyond any statutory or legal obligation. The Guidelines of 2009 were followed in 2011 by the National Voluntary Guidelines of Social, Environmental & Economic Responsibilities of Business, also issued by the MCA (MCA, 2011). These guidelines were reportedly based on the inputs received from

stakeholders' across the country and laid down nine principles for businesses to function in a responsible manner to promote inclusive economic growth at the national level. As in the case of the 2009 Guidelines, the 2011 Guidelines were voluntary in scope wherein corporates were urged to adopt all the nine principles, and to report their adherence to the guidelines based on an 'apply-or-explain' principle. Interestingly, while one of the implementation strategies suggested in the 2009 Guidelines was to earmark —specific amount related to profits after tax, cost of planned CSR activities, or any other suitable parameter, no such suggestion was included in the 2011 Guidelines. The transition from a voluntary CSR regime to a regulated regime came when the Securities Exchange Board of India (SEBI) required the top listed 100 companies, as part of Clause 55 of the Listing Agreement, to mandatorily disclose their CSR activities in the Business Responsibility Reports (BR Reports) accompanying the Annual Reports. This, SEBI opined was in the larger interest of public disclosure and represented a move towards integrating social responsibility with corporate governance. The most ambitious attempt at mandated CSR activities for companies came with the enactment of Section 135 of the Companies Act 2013 (MCA, 2013). India's new Companies Act 2013 (Companies Act) has introduced several new

provisions which changed the face of Indian corporate business. One of such new provisions is Corporate Social Responsibility (CSR). Ministry of Corporate Affairs has recently notified Section 135 and Schedule VII of the Companies Act as well as the provisions of the Companies (Corporate Social Responsibility Policy) Rules, 2014 (CRS Rules) which has come into effect from 1 April 2014.

Applicability: Section 135 of the Companies Act provides the threshold limit for applicability of the CSR to a Company i.e. (a) net worth of the company to be Rs 500 crore or more; (b)

turnover of the company to be Rs 1000 crore or more; (c) net profit of the company to be Rs 5 crore or more. Further as per the CSR Rules, the provisions of CSR are not only applicable to Indian companies, but also applicable to branch and project offices of a foreign company in India.

CSR Committee and Policy: Every qualifying company requires spending of at least 2% of its average net profit for the immediately preceding 3 financial years on CSR activities. Further, the qualifying company will be required to constitute a committee (CSR Committee) of the Board of Directors (Board) consisting of 3 or more directors. The CSR Committee shall formulate and recommend to the Board, a policy which shall indicate the activities to be undertaken (CSR Policy); recommend the amount of expenditure to be incurred on the activities referred and monitor the CSR Policy of the company. The Board shall take into account the recommendations made by the CSR Committee and approve the CSR Policy of the company.

Conclusion

The concept of CSR has gained prominence from all avenues. Organizations must realize that government alone will not be able to get success in its endeavor to uplift the downtrodden of society. The present societal marketing concept of companies is constantly evolving and has given rise to a new concept-Corporate Social Responsibility. Though the concept of corporate governance may sound a novelty in the Indian business context and may be linked to the era of liberalization, it should not be ignored that the ancient Indian texts are the true originators of good business governance. Good corporate governance means governing the corporation in such a way that the interests of the shareholders are protected whilst ensuring that the other stakeholders' requirements are fulfilled as far as possible. India is a fast growing economy and is booming with national and multinational firms. At the same time, the Indian land also faces social challenges like poverty, population growth, illiteracy just to name a few. Therefore it is all the more imperative for the Indian companies to be sensitized to CSR in the right perspective in order to facilitate and create an enabling environment for equitable partnership between the civil society and business. Ideally, CSR policy would function as a built-in, self-regulating mechanism whereby business would monitor and ensure its support to law, ethical standards, and international norms. Consequently, business should embrace responsibility for the impact of its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere. CSR-focused businesses should proactively promote the public interest by encouraging community growth and development, and voluntarily eliminating practices that harm the public, regardless of legality.

As one of the important shloka (quote) from the Rigveda says **“A businessman should benefit from business like a honey-bee which suckles honey from the flower without affecting its charm and beauty”**.

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The Future of Software Engineering by 2050s: Will AI Replace Software Engineers?

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Abstract. The aim of this research is to explore the future of the software engineering domain by 2050. Specifically, it points to some foreseeable best practices in the field, the potential roles of software engineers, and how artificial intelligence could shape the future of software engineering frameworks and engineers' roles. In addition, it shows the current challenges and how to deal with them in future and forecasts the future challenges and ways to avoid them. These expectations were determined by inferring the future from some existing facts from history or current practices and research in software artificial intelligence. Not only that, a qualitative method was followed, and an online survey was conducted and directed towards software engineers and artificial intelligence professionals. As an overall result of this study, the responses and expectations from various tailored surveys agreed that the future of the software engineering field would certainly change, however, software engineers would be the main factors that could shape this future as well. Those who will either keep them dominant in this area or have been left behind and replaced by other systems or businesses.

Keywords: *Software, Software Engineering, Artificial Intelligence, Software Engineer, AI, Future, Programming, Code, Automation*

1. Introduction

Any person can code, program, or applications be created or auto-coded by systems with artificial intelligence (here and here after AI), software engineers will become obsolete or be replaced by AI, and many other forecasts were among the news circulating. And for any software engineer, frightening debates about what their future holds in the middle of the 21st century (here and later). Despite the difficulties of such predictions, most of these approaches were based on some existing facts and developments in the field of SE and AI, and some others were predicted on SE based on the natural evolution of the surroundings and influencing factors that lead to many started a decade ago.

SE, as defined by IEEE Standard Glossary of Software Engineering Terminology, is “the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software).” (IEEE,

1990). However, AI is defined as “The designing and building of intelligent agents that receive precepts from the environment and take actions that affect that environment.” (Brewka, 1996). Hence, both the definitions clearly show the difference between SE and AI fields, as SE is about following standard methods and frameworks while designing software systems, whereas AI is about making such systems more liveable in more. As a human being in any way cares and acts smart. Currently, humans are systems analysers and designers, creators or coders, trouble-shooters and testers. However, it has been argued that AI may in the future threaten to replace humans in the above roles, leaving them with nothing to do in the future.

Software engineers can further realize their importance and value, know the challenges expected of the future, and be prepared to face them and preserve their existence and value. The rest of the paper is constructed as follows: It begins with a review of the history of software and computing that structures current software engineering practices and points to the main challenges in that field and how to deal with them. . Again, this highlights and emphasizes the current state of the SE domain. On current AI progress towards automating most phases of the software development lifecycle framework. Finally, the paper ends with the results, including suggested future work.

2. Literature Review

2.1. History of Computing

Starting by showing how computing characteristics and directions have evolved since its creation to the present day can provide an important indicator of how the future may be shaped for the current computing era. 1613 spotted the first appearance of the word ‘computer’ in a book called “The Yong Mans Gleanings” (R. B., 1614), in a context to refer to a person who used to execute calculations and computations (Wikipedia, n.d.). At that time and from then on, the need for these calculations, and the human ability to perform more complex ones, was intensified, especially when that requirement was highly demanded by navigation and military needs. Therefore, in the early 19th century, he thought of automating the process of such mathematical calculations, and invented a difference engine, accepting a limited number of inputs with certain characteristics and performing only specific mathematical operations could execute, which led to Analytical ideas and designs. The engine is considered a fundamental design concept of the modern computer.

Early computers had continuous programs and changing the design and structure of the machine required changing its function, however, with the software abstraction layer the hardware architecture of the machine was fixed and the change was implemented only at the software layer. Then, from that idea, computer hardware evolved over time, and improved from having a computer hardware that could run only one task or program at a time

(manually; by physically feeding it into the machine) to a computer hardware which supports time sharing model which enables to multitask automatically and simultaneously, increasing the number of programmers and software.

Therefore, during the 1960s, the demand for computers in business, science, and engineering increased, and the need for software programmers grew rapidly in parallel to create, correct, optimize or enhance millions of computer programs for limited uses was being Development of computer hardware capabilities and facilities. Everyone was coding in a way that was incomprehensible to others, in a more complex way, and in a more efficient way that wasn't using hardware level capabilities and in detecting and troubleshooting bugs used to delay and thus in software creation, Which resulted in what was named a software crisis in that era (Pressman, 2009). Then, in 1968 and at the NATO Software Engineering Conference, where the field of software engineering saw the first appearance of the name, the need for solutions to solve the software crisis was raised by then.

Later on, some of these demands were answered with a variety of efforts, and others continue to this day. One of these efforts was to create standard software development lifecycle frameworks or models that simplified understanding of program design and made the software development process much simpler, less expensive, faster, reusable, and faster to understand by a variety of developers. Error detection and troubleshooting procedures (Naur and Randall, 1968).

To this day, software development frameworks are still evolving. Despite the diversity of these models, they all share the following steps: requirements analysis, requirements design, coding or implementing the design, testing and fixing coding bugs, moving the product to a production environment and maintaining it. Lay (Urban, 2015) (Glass, 2002). Because of the emergence of that lifecycle, software engineers began to function in different roles and assigned to different professions, such as software analysts, software designers, software developers, software testers and software support. Furthermore, each phase has seen some improvements, and the sections below will highlight some of these developments that can help us predict the future of software engineering.

2.2. Software Abstraction Layers

For any software engineer, software coding is the leading and most important stage in the software development life cycle till date. The way we coded before was improved by adding higher abstraction layers of programming languages. First starting with a low-level programming language, such as writing binary machine code that was a human unreadable language and had difficulties understanding, coding, and troubleshooting. Then, medium-level and high-level programming languages appeared, such as Assembly, C, C++, Java, and

others, and made programming languages more human readable and understandable by software professionals and thus bug detection, fixing and facilitate the process. Also, whenever higher languages are used, the coding process will take less time as the line of code is reduced. Additionally, other software abstraction layers appeared that allowed designers to drag or move palettes in a GUI interface and the palette's corresponding code would be written immediately. Another interesting abstraction layer of programming is the Visual Programming Language (VPL). In this programming language, programmers can code visually instead of text by dragging, dropping, and connecting graphical elements with each other (Jost, Ketterle, Budd, & Limbach, 2015). An example of a VPL is the DRAGON programming language that was developed by the Russian space program to allow newcomer developers (Wilson & Oram, 2008) the complex code of 20,000 programmers created for the AI controlling the Buran space craft to facilitate interpretation.

A further development in the modeling and designing part of the software development life cycle, where programs such as the Unified Modeling Language (UML) were created to help model or visualize the design of software systems specifically needed by defining the structure of complex programs. Used to do And made it more visible and understandable, especially by newbies who want to start coding with existing complex project code. It facilitated the creation of patterns and libraries to facilitate the reuse of models and code created across different projects (Booch, Rumbaugh, & Jacobson, 1998).

Based on the above facts, previous researchers envisioned that the future of software engineering would have these natures: software systems would be designed as a high level of abstraction, rather than coding programs line by line, by ordinary people (or any person) be able to program, code using existing programs, self-verify and test, be agile and fast to meet user requirements, and save business or end-user data, no matter where in the system. Changes have also been made.

2.3. Artificial Intelligence (AI)

Since the history of computing, we reviewed some areas where the same words were used together to denote humans and computers (machines), and were also proposed by Alan Turing, when "Can computers think" as a proposed question in his paper *Computing Machinery and Intelligence* (Hodges, 1997). Mimicking a human way of thinking and acting forms the field of artificial intelligence, as, generally, the main objective behind AI applications is to create systems that can understand, solve problems and/or intelligently and Can act independently (Urban, 2015). Below is an explanation of the main two AI categories, explaining how current applications and research in each category can play an important role in handling or improving software development lifecycle phases:

2.3.1. Weak or Narrow AI

All current developments in the AI field are considered under this category. Systems in this category are focused on a single task or application, and despite its complexity, it is still not characterized with natural intelligence, or self-awareness (Dvorsky, 2013). Examples of Narrow AI applications are Apple Siri,

Google Self Driving Car, IBM Watson, or AlphaGo Zero. The AlphaGo Zero is another interesting example. It is the first computer program to beat the world champion Go (China's Game). It made it so that amateurs and professionals alike played the game after being trained in various ways, and also played with themselves and learned from mistakes how to improve themselves more. But still, all the above systems are not depicted with human-like intelligence and cannot act or act intelligently in different areas, because they are acting smart in only one or specific area.

Now, below are some examples of AI systems that are designed to mimic the operations required in most software development lifecycle phases. A group of researchers has created an AI system that can work in The software development testing phase, because such systems can select the best trained test cases to run based on the nature of the software bug solved, and the main idea behind it is to learn which test cases based on the similarity of bug-revealing How to select test cases (Wang, Wu, Lee, & Yao, 2011). Genetic Programming Systems Week is another example of AI. It tackles the challenge of auto-coding software development by selecting a required code (based on an understanding of the problem variable) from a pre-trained database of codes using methods similar to the natural biological operation of genes (Spector, 2011).

2.3.2. Strong or General AI

General AI is the point when the intelligence of an AI system will reach or exceed human-level intelligence where such intelligence can be applied not only to a specific area or case scenario but also to multiple use cases (Urban, 2015). Hundreds of researchers were surveyed to find out how quickly AI systems would reach that level of intelligence, and averages believe it won't be seen before the 2040s (Bostrom, 2014). But, as a result of that development, we can expect AI to replace software engineers (or humans) by 2050 throughout the phases of the software development framework.

3. Research Method

The previous sections presented some of the known solutions in the area of SE, and AI helped predict the future of SE. However, to ascertain whether these expectations are of SE or AI expertise, and to explore more predictions, a qualitative exploration method was chosen to ask about the future of the SE domain and how AI can predict that future shaping. The questions, shown in the Appendix section, were prepared and reviewed by an expert

professor who is a veteran in the field of software engineering. Most of the participants selected in this study were believed to be SE and AI experts working in excellent, high-tech and renowned institutions in the UK and UAE. In addition, he was asked whether the questions raised were valid or not. The sub-sections below will talk about them and the methodology to be followed in details.

3.1. Participants

This study targeted the demographics of LinkedIn, a social media platform designed for business and professional networking. The study targeted the demographics of LinkedIn, a social media platform designed for business and professional networking. Most of them were working as physicians, researchers or lecturers in various top giant companies and universities like MIT, Harvard, Stanford, Cambridge, Google, Microsoft, Apple, Adobe, IBM, Samsung, Amazon, NASA, Facebook, Uber, Snapchat, LinkedIn and more. The total accepted connections were nine hundred and ninety-five users in just one month of this research period.

3.2. Tools

The nine main survey questions were prepared using the SurveyMonkey tool, an online survey platform. The first three questions designed to extract certain demographic details, i.e., the nature of their work, their years of experience, and what company they are working for. The rest were mostly open-ended questions and aimed to elicit participants' opinions about the software engineering discipline and the future of software engineers by 2050, the potential challenges they might face by that time, and how to solve or overcome these challenges to know his visionary thoughts.

3.3. Procedures

A brief description of the purpose of the research was given on the survey page. Further, to ensure spontaneous answers of the respondents, they were noted that they would answer in anonymous mode. A question about the validity of the research topic and the survey questions were raised at the end to ensure that the question design reassures readers and to know whether such a study is important nowadays. Survey email invitations were sent to LinkedIn members on different days at different times, and the survey link was left open for twenty-three days.

4. Discussions

Survey responses were generally analysed without being overly specific in the analysis of responses to the occupations of the various participants, i.e., businessmen, academics or researchers. Such an analysis was difficult to achieve because of the wide variation in the number of respondents in each region. However, this may be done for future work, where survey requests will target more academic and research participants, until a detailed analysis

of each is achieved to obtain a detailed future outlook in each area and to obtain more reliable forecasts.

5. Conclusion

By 2050 the future of the software engineering field will change and evolve. The software development process was likely to consider new approaches, such as new, simpler and human-friendly software abstraction layers, that could make the coding process an easier task for anyone. In addition, it was envisioned to use AI systems to generate code by exporting or reusing already existing code (or lines of code), depending on the user's requirements. Last, as a substitute for any of the options, may or may not change. It is predicted that they will still find a place in the future, either as moderators or developers of AI systems, but only if they keep up with the recent technologies, keep exploring opportunities, develop the required skill sets, etc. Embrace and use AI as a complementary tool. Rather than as an independent software development system.

As a future work, more ideas can be collected, as this project received some valuable responses in just a month due to the time limit. However, more people may be invited to participate with their ideas. Additionally, now and up to 2050 other researchers can validate the results of the study and compare the findings of this research with those of software engineers at a certain point in time, or they can collect additional future probabilities.

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A Systematic Evolution & Beneficial Approach of 5G Mobile Technology for Next Generation

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Abstract:-The mobile technology is the today's & tomorrow need, and mobile telecommunications industries are create a new era of network infrastructures and technologies to offers more benefits to the end users. New generation mobile technology like 5G is having various profits as compared to old generations i.e. 1G, 2G, 3G and 4G. The next generation (5G) of mobile technology gives offers flexibility, interoperable, lower latency, ten-times the available spectrum, ten-times the number of devices with a fraction of the latency and 10 time faster than 4G that helps all stakeholder of 5G but also 5G wireless networks will specify the evolution beyond mobile internet to enormous or gigantic Internet of Things (IoT) for the horizon Twenty-Twenty.

5G network might include all types of advanced technologies to provide extraordinary services. As a result, Internet of Things (IoT), Cloud computing service, network-based software (SDN) and new developments have become some of the leading technologies of the 5G technology network. In Mobile telecommunication (5G), cloud-based services provide flexible and efficient ICT solutions (technology and information technology) by reducing investment costs and management in IT infrastructure. The basic uses of 5G include advanced mobile broadband, robotic surgery, smart cars, realistic or unpopular taxpayers we see, and IoT.

In this paper, the emergence with background of 5G technology or mobile networks recommendations and some specific guideline for future that to be considered by the organization before developing and integrating 5G network. Which will change and define the future of telecommunications standards such as e-payments and electronic documents and many more such as high quality video streaming user can benefit from 5G mobile technology, video chats provide a realistic feeling one can reach the other side with screen, fast data speed, Ultra-low latency, Better Internet speed. We finally compare 5G to Wi-Fi 6 and analyze the opportunities that new wireless technologies and also give some directions to overcome these issues.

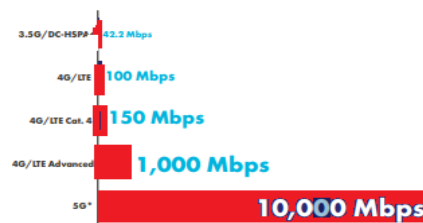
Keywords: 5G, 5G Mobile Networks, 5G Wireless, IoT, Wi-Fi 6, Next Generation, Wireless Communication System.

I. Introduction: The new innovations that are trip by the rise of a new set of standards define new stages in the history of mobile technology, which are classified as generations. We are currently moving towards the fifth generation (5G) of mobile technology networks. Wireless technology is technically started with 1G, and in the beginning of 1990s, it was developed into 2G where companies send messages between two mobile devices impressed the world. Eventually the world moved on 3G, which provided freedom of call, send text messages, and browses the internet in the best way speed. 4G has improved many capabilities; it is only possible for the third generation wireless. The evolution of cellular communication network technologies from the 2G Global System for Mobile (GSM) to the 4G Long Term Evolution-Advanced (LTE-A) system. When technology goes from 2G GSM to 3G Universal Mobile Telecommunication System (UMTS), higher network speed and instant download speed allowed real time video calls. The next LTE and LTE-A provided have been upgraded network capacity and reduction of system access-server delays, enabling triple play traffic (data, voice, and video) access possible wirelessly, anytime anywhere.

In gigantic data rate has an increase from 64 kbps in 2G, 2 Mbps in 3G and 50-100 Mbps in 4G. 5G is expected to improve not only the speed of data transmission of mobile networks but also the increase, connectivity, and energy efficiency of network i.e. up to 1 Gbps. Basic difference between 5G and Wi-Fi 6 are complementary to each other that offers higher speeds, lower latency, and increased capacity. It is estimated that by 2021, 50 billion devices will do so you are connected to a global IP network, which may appear on presents a challenge and the number is rising, at an average of 21 billion by December 2020. 5G network should be up to 1000 times the capacity of the system, 10 times the frequency spectral efficiency, electrical power and data rate upto GB /s for low bandwidth and high data rate of 1 GB /s at high speeds and 25 times the average cell average.



Figure: 5G Wireless Mobile Network



Comparison graph for data rate

Therefore, the concept of 5G networks comes from 4G networks, have arrived presence due to the many challenges facing 4G networks, as the need for higher data and low power consumption, low cost, low end delays, and high inter-device connectivity. However, a

complete analysis of future networks or next-generation networks of information systems discusses compatible platform and configurations it's really a challenge. This means that some of the special conditions are missing supported by 4G network. 5G networks must be able to support such communication networks i.e. high-speed or fast networks can easily reach 350 to 500 km/h, while 4G network scanning only supports connections conditions up to 250 km/h. 5G mobile network will be able to access different wireless technologies same time. The 5G mobile technology should be able to combine special flow from different technologies.

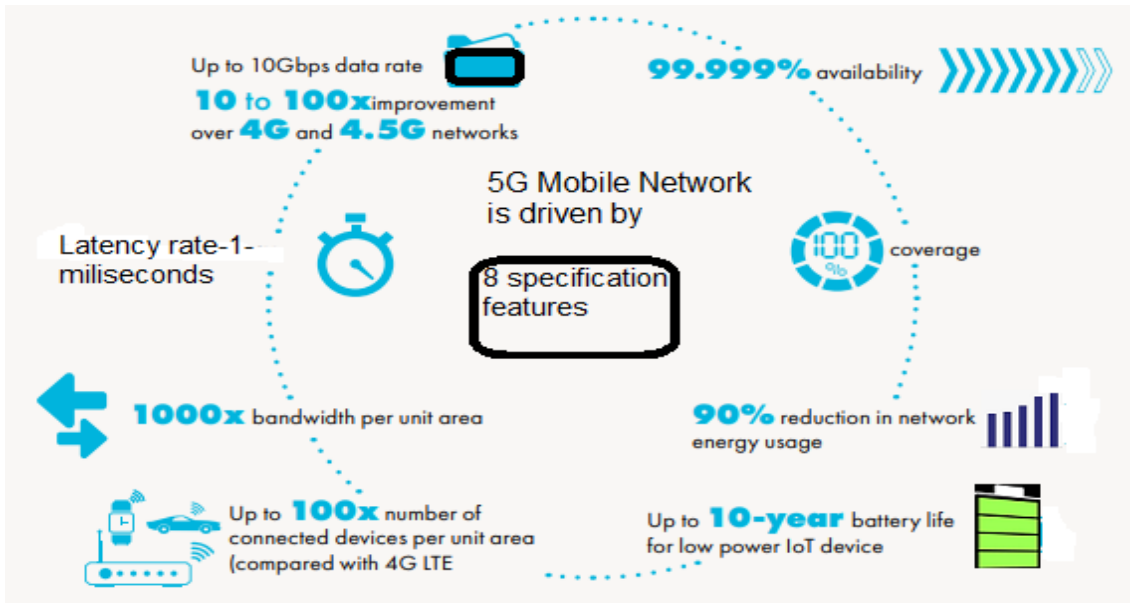
Wireless communication and its types and categories of support systems and devices have overcome all traditional communication systems and have provided the potential to expand global economic systems.

Therefore, the following are the most important aspects of the definition for 5G: high through put, low latency, high reliability, and energy-efficient mobile communication technology.

NEXT GENERATION MOBILE NETWORK ALLIANCES sets out the priorities for 5G networks:

- Increased Data rates
- 1 Gb per second simultaneously to many workers on the same office floor
- SPECTRAL efficiency more enhanced as compared to 4G Coverage speed
- Signaling efficiency enhanced

II. What is 5G and Comparisons between 5G & 4G/LTE Technology:-The next 5G wireless network will deal with evolution. Major evolution compared to modern 4G and 4.5G i.e. known as an advanced LTE that beyond the rate of data speed, new IoT and cases of use of sensitive communications will require new types of improved performance. The "low delay" is what it offers real-time communication of cloud services: this is the key to the success of automobile sector i.e. self-driving cars for example. Also, low power consumption that is what will allow connected devices to run for months or years without the need for human interpretation. Unlike current IoT services that make operational transactions available best from current wireless technology i.e. 3G, 4G, WiFi-6 Bluetooth etc., 5G networks will be built to bring the standard to performance is required for large IoT. It will make it fully visible the earth is everywhere.



III. 5G Mobile Networks: Aim and Applications: 5G is the fifth generation of mobile network technology. Industrial organization 3GPP defines systems that use "5G NR" (5G New Radio) software as "5G". This definition has been widely used by the end of 2018. Some individuals and organizations may maintain the term 5G in programs that meet the requirements of the International Telecommunication Union (ITU) IMT-2020 (International Mobile Telecommunications) standard. 3GPP will deliver their 5G NR to ITU.

(A). 5G Mobile Network- Aim: IMT-2020 is a requirement issued by the ITU Radio communications sector (ITU-R) in 2015 on 5G networks, devices, and services. Eight parameters have been shown for key capabilities of IMT2020 5G (ITU, 2015).

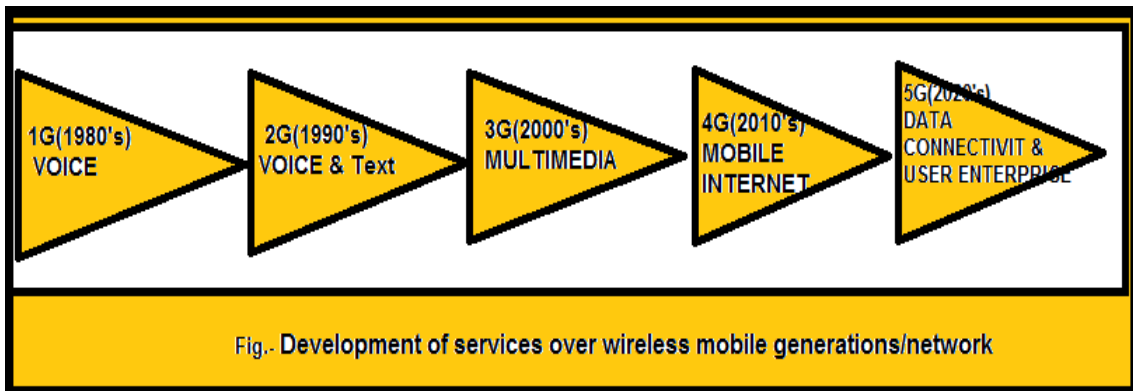
- 1: Demonstrating a 5G end-to-end system that offers wet video services for mobile devices.
- 2: Build mmWave access technology and AI-assisted communication needs that meet the requirements of aim 1.
- 3: Installation of 5G status and spectrum control functions.

(B). 5G Mobile Network- Applications: - 5G is not just the revolutionary or development of the previous generation of mobile networks; it is also a technology that will create unprecedented use, where high-speed communication, low latency,

and high connectivity are offers. 5G has the potential to produce new applications, industries, and business models. The 5G network can support an unprecedented Augmented Reality (AR) and Virtual Reality (VR) experience, requiring high-definition video transmission with low latency.

IV. The Development /Evolution Phase of Mobile Technology or Communication

Network: Cellular mobile network has more popular in last few years because of the rapid revolution in mobile technology. This revolution is due to very high increase in telecom users. This revolution is from 1G to 5G mobile technology.



A- 1G- The first Generation of mobile network:-The First Generation (1G) of mobile cellular networks entered the commercial market at the end of the seventies. 1G network started to be implemented in 1981. 1G was an analog communication system that provided voice services. Founded the foundation of cell phone communication. In 1G, certain radio groups are licensed for use only on mobile networks. For example, the Advanced Mobile Phone System (AMPS) has largely used the 800MHz band. There was low profile efficiency, and as there were no international agreements in the use and management of such networks, there was a wide range a variety of incompatible levels that work.

B- 2G-The Second Generation of mobile network:-The 2G mobile network system introduces new digital wireless transmission technology, also known as the Global Mobile Communication System (GSM). GSM technology has become a basic standard for the continuous development of radio standards. 2G mobile network supports speeds of up to 14.4 to 64 kbps, using SMS and email services. CDMA system (multiple access system) invented by QUALCOMM company will also be introduced for use in the mid-1990s. CDMA provides a lot GSM capability depending on spectral efficiency, number of users and data rate.

The key benefits of 2G mobile networks over first generations were that:

- Phone conversations were digitally encrypted;

- 2G systems were considerably more competent on the spectrum allowing greater mobile phone penetration levels.
- 2G launched data services, and gave rise to picture, text, and multimedia messages.

C- 3G-The Third Generation of mobile network: - 3G mobile network starts with the launch of the entire cell phone global/telecommunications system (UMTS). UMTS has a data transfer rate of 384kbps and is the first in support video calls on mobile devices special apps are designed for active phones with multimedia chat, email, video chat, games, social networking and health care.

The main key features are high-speed mobile phones access to Internet-based Internet Protocol (IP) services, video calling, security etc. Package switching technology used in 3G, Voice calls use translation by circuit switch. The purpose of 3G is to allow for multiple installations at a minimum investment. 3G includes use of Wideband Code Division Access Multiple e.g. WCDMA, UMTS and CDMA.

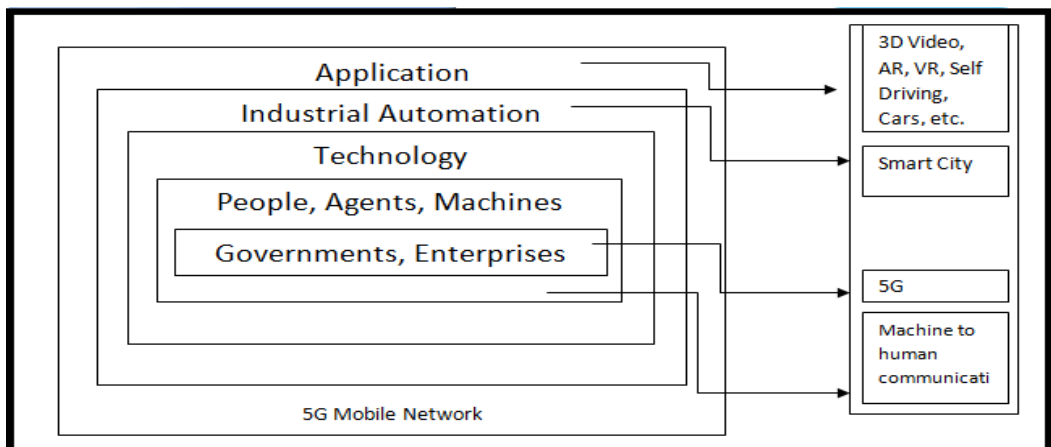
D- 4G-The Fourth Generation of mobile network: - The 4G mobile network system is an enhanced version of the 3G mobile network invented by IEEE, offers high data speed and more sophisticated multimedia services. LTE and advanced LTE wireless technology are used in 4th generation system, it is also backward compatible, which makes it easy to develop and update LTE and LTE advanced networks. In LTE system, the data transfer rate can be significantly increased, allowing you simultaneously transmit voice call and data. All services, including voice, can be set via IP packets. Complex media modulation and aggregation schemes are used to double the downlink or downlink throughput.

The Key features of 4G mobile networks: Significant data security up to 1 GBPS, Increased safety and mobility, reduced latency for key applications, Streaming video and HD games.

5G-The Fifth Generation of mobile network: - 5G mobile network uses the latest technology to provide users with very fast access to the internet and multimedia services. To get higher data rates and 5G technology uses millimeter waves and data transmission spectrum without resolution. **The main Key features of 5G technology:** 10 Gigabit/ super-fast cellular internets, Low latency in milliseconds, Reduce overall data cost, High security and reliable network, Use technology such as a small cell that forms a beam to increase efficiency, Future compatibility networks provide further improvements in the future, Cloud infrastructure provides energy efficiency, ease of maintenance and equipment upgrades.

V. Framework Or Key Benefits of 5G Technology/Networks - The implementation of standards **under** a 5G roof would likely be around the year of 2021.

- 5G is a totally wireless communication network with no limitation, called it REAL wireless world. 5G technology will bring almost perfect real world wireless or called WWW: World Wide Wireless Web.
- High Data Rate: We can send Data much faster than that of the previous generations.
- Using wearable devices with Artificial Intelligent capabilities.
- Energy Saving, Money Saving & More Effective.
- Less data traffic Congestion.
- Low Latency: Fast Response in downloading
- Supportive High Speed Multimedia: Additional features such as Multimedia Newspapers, also to watch T.V programs with the clarity as to that of an HD T.V., Clarity in Voice and Audio Calling
- Large Broadcasting: Data can travel in GB/s

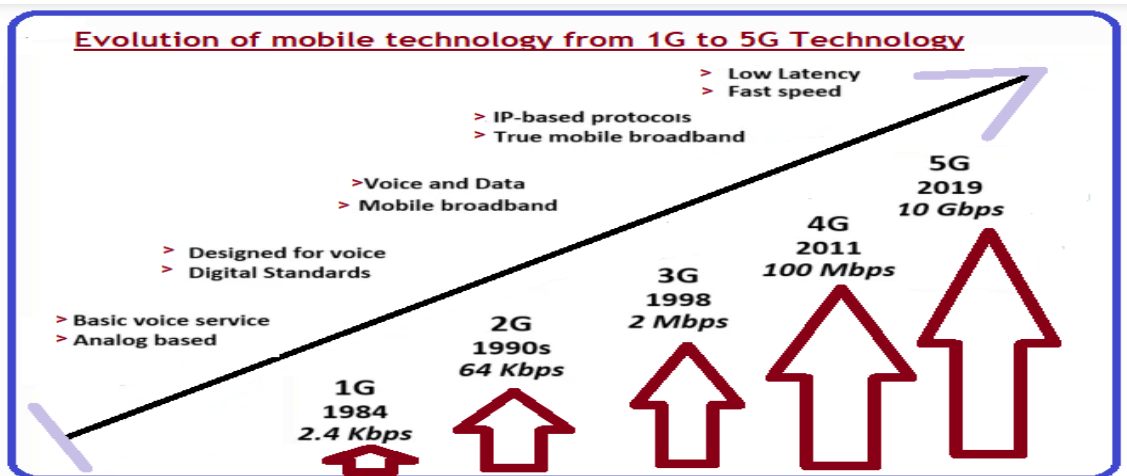


VI. How fast will 5G take-up be:-

Expected 5G acquisition rate is very different from all previous generation networks (3G, 4G): While earlier technologies have driven the use of mobile internet and 5G it is expected that more new IoT applications will be developed, such as connected and self-driving cars for example. Given new ideas for broadband use, some equipment providers such as Ericsson predict more than 150 million connected devices in less than 12 months after the launch of the network by 2025, a 1.7 billion 5G connection, expected to 20% of full connections (source: GSMA Intelligence, 2020).



VII. Evolution & Comparative Analysis of Different Generations Attributes: - We have generated certain tables to compare the present, past and future technology with order to several attributes. Table shows all those attributes of comparisons



Comparative Analysis of Different Generations Attributes:					
Generation / features:	1G	2G	3G	4G	5G
Start/Deployment	1970/1984	1980/1989	1990/2002	2000/2010	2017/2020
Data rate in bandwidth	2 Kbps	14-64 Kbps	200 Mbps	1 Gbps	>10 Gbps
Standards	AMPS	TDMA, CDMA, GPS, GPRS	WCDMA	Single unified standard	Single unified standard
Technology	Analog cellular	Digital Cellular	Broadband with CDMA, IP technology	Unified IP with LAN, WAN and WLAN	Unified IP with LAN, WAN and WLAN and WWW
Network Services	Mobile Technology (voice)	Digital voice, SMS, Higher capacity packetized	Integrated high quality audio and video	Dynamic Information Access, Wearable devices	Dynamic Information Access, Wearable devices with AI
Multiplexing Technique	FDMA	CDMA, TDMA	CDMA	CDMA	CDMA
Switching	Circuit	Circuit and packet	Packet	All Packet	All Packet
Core network technology	PSTN	PSTN	Packet network	Internet	Internet

Conclusion: In this paper, we have studied an evolution & key benefit with systematic approach for 5G network technology for wireless or mobile communication system. This technology is works or designed for an open platform on different layers, from the physical layer up to the application layer. A new revolution of 5G technology is about to start, 5G technology going to give tough completion to computing devices whose marketplace rate will be affected. The core infrastructure or new coming 5G technology offer higher capacity, better quality of service, inexpensive rates, high peak expectations and much reliability and greener technology. 5G

network technology will offer a novel age in mobile communication system. The 5G mobile networks will revolutionize the wireless market through a combination of upgraded technologies to meet the need for launching a high-speed mobile network.

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A Study on Digital Marketing and it's Effect

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Abstract

We develop and describe a framework for research in digital marketing that highlights touch points in the marketing process as well as the marketing strategy process where digital technologies are taking place and will have a significant impact. Using the framework we organize development and existing research and review research literature around elements and touch points in a broadly defined digital marketing space. We outline emerging issues in and around the touch points and related questions for future research. Finally, we integrate these identified questions and set a research agenda for future research in digital marketing to examine the issues from the firm's point of view.

Keywords: Digital Marketing, Online, Mobile, Internet, Search Engine, User Generate Content, Omni-Channel Marketing.

1. Introduction

Commercial use of the Internet and the World Wide Web has been around for a quarter century. The business landscape has changed at a frantic pace during this time. Large multinational corporations such as Google, Facebook, Amazon, Alibaba, eBay and Uber, unheard of twenty years ago, have emerged as major players in our modern economy. In 2015, Online sales in the U.S. It accounted for 7.4% of total retail spending in the U.S., the highest percentage since tracking began in 1999 (Phillips 2015). Sales made through mobile devices have increased from about 22% to 27% at a faster rate than all online sales (Rao 2015; Malcolm 2015). Corporations now highlight the importance of building "digital relationships" with (Phillips User Generated Content 2015). In addition, digital technologies and devices such as smart phones, smart products, Internet of Things (IoT), artificial intelligence and Omni-channel marketing deep learning promise a significant change in the lives of consumers in the near future. It is against this background that this paper attempts to understand how developments in digital technology are reshaping the process and strategy of marketing, and the implications of this change for the broader space research we refer to as "digital marketing".

Our objectives for this paper are three-fold. First, we develop and describe a framework for research in digital marketing that highlights touch points in the marketing process as well as

User Generated Content the marketing strategy process where digital technologies are taking place and/or will have a significant impact. Our objectives for this paper are three-fold. First, we develop and describe a framework. For research in digital marketing that highlights touch points in the marketing process as well as the marketing strategy process where digital technologies are taking place and/or will have a significant impact.

2. A Framework for Analysis

In our discourse, we examine issues of research in digital marketing from the perspective of the firm – that is, we examine the strategic, Omni-channel Marketing tactical and implementation implications of research conducted in the field of digital marketing and on core issues of managerial relevance. Let's focus on comparison to applied or methodological research. However, these issues can lead to fundamental questions that can be answered in the fields of consumer psychology, marketing analysis, economics or computer science. In order to be as comprehensive as possible covering all the major fundamental research developments in the field of digital marketing, and given our above focus, we have narrowed down our search without compromising on representation. Our search for relevant literature focused on four marketing journals: the International Journal of Research in Marketing, Marketing Science, Journal of Marketing Research, and the Journal of Marketing, focusing on articles published in the period 2000 to 2016. We started on the Web of Science and searched for articles with the keywords "digital" or "online" either as a research topic or as part of the article title provided us with 305 "seed articles". As we read these papers, we removed those papers which were not directly relevant and included other relevant papers cited in these seed papers. This expanded our list to other journals not included in our initial search. For each topic discussed in our paper, we selected the earliest paper on this list, and added some of the most frequently cited papers in that topic to be discussed under each topic we review. To this list we also added the most recent papers to present the review as current as possible. Thus, a review of existing research is not meant to be exhaustive, but representative so as to cover the issues in sufficient depth and appropriately focus on future research issues.

To this list we also added the most recent papers to render the review as current as possible. Thus, a review of existing research is not meant to be exhaustive, but representative so as to cover the issues in sufficient depth and appropriately focus on future research issues.

Our review complements recent review articles on digital marketing and related topics.

The article by Yadav and Pavlu (2014) focuses on Omni-channel marketing in a computer-mediated environment and reviews the literature in both marketing and information systems. This article, along with articles by Lamberton and Stephen (2016), focuses on consumer psychology, motivations, and expressions in the digital environment to highlight some. The

article by Wedel and Kannan (2016) focuses on the issues of modeling and methodology in marketing analytics necessary for the advent of digital, social and mobile environments and user generated content. Our review cites these articles in the appropriate sections for more detail on issues we do not cover. The paper is organized as follows. In Section 2 we outline and identify touch points in processes where digital technologies play an important role.

3. Key Concepts and Elements

Marketing research focuses on the acquisition and processing of information resulting from the use of digital technologies to understand specific elements of the environment, actions and outcomes, and inform the firm's marketing strategies. Examples include understanding customers' browsing behavior on websites and mobile sites, understanding their search behavior in an online versus mobile environment, using online reviews, social interaction, or using social tags to understand how a firm is marketed by a market. How the brand is being perceived, and so on. While real issues are discussed in the context of the environment and the company, all such research involves the development of specific methodologies and/or metrics. Within this section we highlight managerial questions that can be answered using data within the firm and environment, however, we do not focus on methodological aspects as these issues are well covered in existing research (For example, see Weddell & Kannan 2016). There are issues related to marketing strategy that are partly captured in one or more elements or interfaces, and we specifically discuss issues not captured elsewhere in Section 7 Huh. We do not track the development of digital technologies themselves, but they are implicitly taken into account when discussing the impact on customer touchpoints. In different sections, we also outline the details and capabilities of new technologies that lead to new opportunities – for example mobile technologies, virtual reality, wearable computing and IOT.

4. Social Media and User-Generated Content

An important feature that differentiates the digital environment from the traditional marketing environment is the ease with which customers can share verbal information not only with a few close friends, but also with strangers on an extended social network. In the digital environment, customers can post reviews on products, services, brands and firms on firms' websites as well as on third-party websites and social networks, and these reviews reach a vast number of potential customers.

Another type of platform that connects the firm to the crowd (customers) is the crowd sourcing platform that firms can use to generate ideas for new products and services. Such innovation platforms allow firms to repeatedly collect ideas from a scattered crowd of customers and help firms Omni-channel Marketing pick the best ideas to move forward in the innovation process.

Bias (2013), who researched Dell's ideaStorm platform, found that customers who submitted ideas repeatedly were more likely to provide good ideas, but their success rates fell once they won. Luo and Tubia (2015), focusing on online idea generation platforms, suggested that the platform adapt the work structure of the idea contest based on the domain-specific knowledge of each customer (idea submitter) to enhance the quality of the idea. As innovation platforms become increasingly popular, more research is being done on how to enhance the ideation quality in such platforms. In terms of firm sponsored community platforms.

5. Agenda for Future Research

Our review of existing work in digital marketing has focused solely on marketing journals by design, primarily to keep these review tractable as well as highlighting gaps in the marketing literature and suggesting new topics to explore. Any new research effort must be aware of theories and models developed in marketing as well as consumer psychology, sociology, economics, computer science and operations research to take new lines of inquiry. From this perspective, we provide below specific research issues and questions as digital technologies interact with each of the broad areas identified in Environment, Company, Outcomes, and Marketing Strategy. While new digital technologies are constantly emerging, we highlight only those broad categories of technologies and methodologies that are likely to impact marketing in the near future.

1. Technologies including personal computing devices and mobile devices, wearable's technologies (e.g., smart watches, smart glasses), virtual reality (VR) and Augmented Reality (AR) technologies, mobile applications, etc.;
2. Cloud computing, including AI, computing technologies and analytical methodologies Cognitive computing and deep learning, machine learning technologies and big data analysis;
3. Search technologies for images, videos, Voice-recognition based search, eye-tracking technologies, and search technologies for the "dark" web;
4. Connectivity technologies including sensors, Internet of Things (IoT), chat New forms of technologies, Omni-channel Marketing platforms like Uber, Airbnb, etc.

6. Marketing Strategy

From a strategic perspective, it is important to understand how the competitive landscape will change as a result of technology. For example, Amazon has emerged as a giant in the retail sector, which has completely changed the competitive landscape by using the online channel. This coincided with the maturing of online technology, as well as changes in consumer behavior. Could mobile technology likewise disrupt markets?

This coincides with the maturing of online technology, as well as changes in consumer behavior. Can mobile technology also disrupt markets?

Recent examples of travel intermediaries benefiting from the introduction of mobile apps in travel and hospitality are to strengthen its competitive position in the market vis-a-vis industries and hotel chains. Instead of creating intermediaries, technology has made intermediaries stronger. Can this be replicated in other workspaces? These are important research issues that should be considered. Technological development emerges if the firm/product category is significantly affected based on the above analysis, then how can the firm take advantage of technology/equipment better than its competition? How the firm customizes the design and price of the product according to the added value which is designed for customers? How firms can use technology to better promote themselves Product/Service (cf., geo-targeting and coupons in the case of mobile devices)? How the firm adapts its current marketing mix to influence customer behavior in such a way that profit to the firm? How can the firm design a digital experience that drives customer satisfaction, revenue and customer loyalty (for example, can mobile apps drive more customers) loyalty)? The answers to these questions will essentially involve theoretical models and Outline from consumer psychology, sociology and economics. contributes to the ubiquitous connectivity enabled by mobile devices and platforms The rise of category-leading companies Omni-channel Marketing like Uber and Facebook, it's important Research how delivering value to the customer using connectivity can replace the competitor boundaries. This will become an important subject of investigation in the coming days. Finally, it is quietly believed that firms should adopt new digital technologies as they emerge. To provide more value to customers however, the price paid to the customers depends on Provision of reliable and superior service using technology. What is the first Benefit in adopting new digital technologies? Would it be better for one firm to wait until the other? Competitors adopt technology first? Are there late-mover advantages? Answers to These questions depend on the specific technology, firm and customer base characteristics and competitive market factors. There is a need for both authentic and empirical research in this area.

7. Conclusion

Our main objective in this paper is to set an agenda for research in digital marketing. we have Digital marketing defined in the broadest sense and we have developed and proposed a Framework that highlights the marketing process as well as touch points in marketing Strategy Process where digital technologies play a vital role. Using this framework we have organized and reviewed existing research around these touch points. Unresolved questions of the areas that we have identified above could benefit from future research, so we have integrated all. These questions are covered in the detailed agenda in questions. We

deliberately synthesized research issues at a higher level to encourage more detailed and specialized research aided by our framework. , We leave it to other researchers to investigate these issues. Currently survey on this paper we identified should be well complemented. To facilitate our analysis we have concentrated only on papers in marketing domain. However, there are several important contributions in the field of information systems and economics that can complement our Work. Finally, we have some observations regarding the research process that will prove useful knowledge. It is imperative that the academic- and practitioner-communities work together in order. To tackle these research issues. For one, the pace of digital technology development is has grown enormously and much of it is quickly implemented to gain a competitive advantage Instead of lengthy discussions on their pros and cons and ROI. Researchers are needed to take a critical look at the research issues we mentioned with appropriate data from observation studies and field experiments. Physicians can provide raw materials and academics can provide rigor, and together they can expand our knowledge of the ever-changing digital atmosphere. And this augurs well for the future.

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The Entrepreneurial Startups-Redefining India's Economic Growth

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1- Abstract:-

India wants a minimum of ten million jobs a year and international knowledge shows that it's innovative. Startups act because the centres of innovation and square measure a good catalyst to boost employment creation within the economy. The idea of begin –up India campaign was started presently by fifteenth August 2015. Startups involve dealing with new technology, style method, innovation, and creative thinking that typically lies at the highest finish of the worth addition development. India could be a home to virtually 10000plus startups beginning p.a. standing simply behind the United States, UK, and Japan consistent with the NASSCOM report of 2021. If the expansion continues at constant pace then it's expected that the Indian start-up scheme can generate virtually 10lakhs lakh jobs within the next 5 years. India is additionally aforementioned to fancy a demographic advantage and it's anticipated that by 2021 India will be home to 112 million operating population falling in the age group of 20-24 years as compared thereto ninety four million staff of China. The Prime Minister's Startups India campaign could be a nice initiative to boost entrepreneurship culture in India. This initiative can play a very vital role in additional facilitating startups and providing a replacement dimension to entrepreneurship within the Indian ecosystems.

Keywords- Innovations, entrepreneurship culture, ecosystems,demographic advantage.

2- Introduction:-

Startups may be small initiations, innovations, design thinking or process but they can play a significant role in economic growth. Startups are the centres of innovation. Startups create jobs which mean more employment, and more employment means an improved economy. Startups have a direct-impact on the cities and business ecosystems that makes it more sustainable and viable.

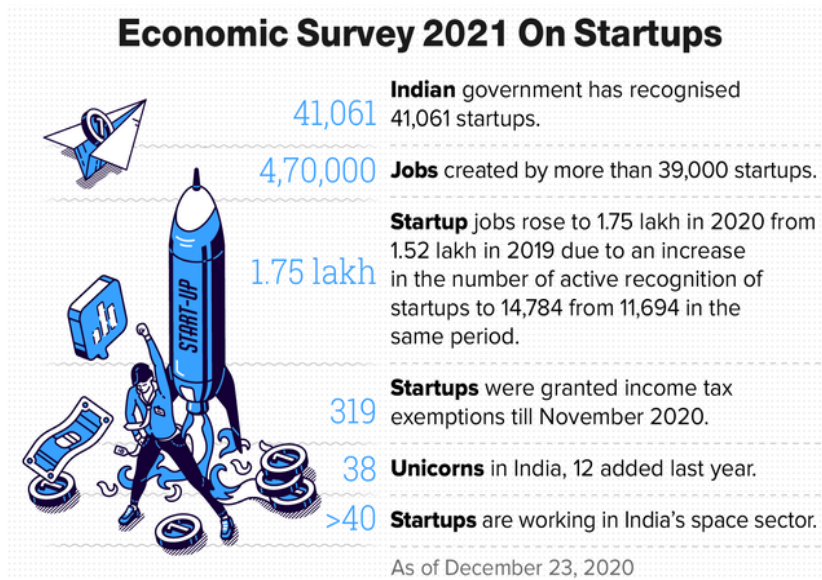
In the coming years, more and more startups are growing with modernization, creativity, innovations & viability which have a large potential to change the world's economy. Startups can be initiated anywhere, and it's often the countries with the highest needs that have the biggest opportunities and funding.Such environments offer many internal and

external problems that startups can take advantage of, not just to make a profit, but also make an impression in a developing economy. An Entrepreneurship culture is the only way to augment the economic growth of any nation. A small start-up idea can be turned into a big innovative and unicorn solution that can change the future of developing countries.

Since the numbers of startups are growing tremendously, the core competition between them is also increasing. But in fact a healthy competition is significant for startups and customers to curate the start-up environment. As of now, many startups have introduced the latest technologies like the Internet of Things, Artificial Intelligence, Robotics, metaverse, etc. Most of the giant companies outsource their tasks to startups nowadays, which will help to upsurge the cash flow requirements of startups.

Therefore start-ups need multi-pronged approaches, comprising:

- 1- Collective access to capital
- 2- Refining access to talent
- 3- Initial access to markets
- 4- Establishing pre-innovative regulations and fiscal policy
- 5- Startups friendly policies
- 6- Accesses to overseas markets that support cross-border data flows and restrain trade barriers.



Source-<https://www.weforum.org/agenda/2022>

3- Objectives of Startups in Economic Development of Country:-

- 1- To analyse the initiative for startups India campaign.
- 2- To understand, analyse and rectify the problems faced by the start-ups.
- 3- To study the impact of start up on people and help to enhance the standards.
- 4- To study the awareness about Startups in the light of recent changes announced by the Government
- 5- Improved standard of the living
- 6- Growth in GDP (Gross Domestic Products) and Promotes export worldwide.
- 7- Startups create a job which means more employment, and more employment means an improved economy.
- 8- Apart from driving economic recovery, startups and scale-ups also need to drive the mind-set shifts required for adoption of their technologies and ideas.

4- Importance of Startups in economic Growth and Development:-

Startups are the catalyst for economic growth both globally and locally. The value that startups create is nearly on par with the GDP of a G7 economy and the amount of startup funding in 2021 surpassed \$600 billion, for shattering funding records. The number of unicorns and ideas are well past the 1,000 mark and growing exponentially.

The Indian start-up ecosystems, believes government needs to play an activist role in building an Indian start-up world. The Start-up India campaign is a great set of example of how the government can help foster growth of India's start-ups. As part of the program, the government is offering financial incentives for start-ups, including but not limited to 100 percent of tax exemption for three years, and has allocated Rs 500 crore to support funding for specifically targeted groups and allocations, such as women and Green entrepreneurs. Additionally, the Indian government has announced a capital gains tax exemption for start-ups initiatives, as well as an 80 percent rebate for start-ups and for the filing patents. approx 97 percent of India's start-ups said that they planned to continue for new innovations and designs.

Thus, Startups help in self-employability and sustainability and for creating job opportunities and research thereafter. if a country has to boost its economy and diversity, then majority of population has to take part in the country's finance which will result in increased economic potential and money circulation thereafter finally boosts the economy via startups catalyst and pillars.

To sum up

Entrepreneurs are not only provided with options that benefit themselves, but their work also develops the economy and the nation's diversity.

Entrepreneurs provide job opportunities.

Entrepreneurs increase competition & boost productivity.

Entrepreneurs create new business & new markets.

Entrepreneurs add national income.

5- Direct Impact of startups in developing Indian economy:-

- 1- Creative ideas create more work assistance and mechanism.
- 2- More competition which gives more confidence for the job.
- 3- The explosion of talent from professionals and entrepreneurs for better ROI
- 4- New technology to cut production costs
- 5- More competition which gives more confidence for the job
- 6- More outsourcing of services TOT(Transfer of Technology), TOK(Transfer of Knowledge)etc.
- 7- Can reduce imports and enhance the export mechanisms.

6- Indirect Impact of startups in developing Indian economy:-

- 1- More indirect jobs are essential and, there is an impact of startups in the Indian economy.
- 2- Good progress in entrepreneurial education and design innovations.
- 3- Progress in the health segment
- 4- Progress in the transport segment
- 5- Overall increase in the world ranking in terms of the innovations, startups and design process.

7- Startups that have joined the Unicorn Club in 2021:-

Startups India is a program and an ecosystem that aims to support innovations to foster the talent of every entrepreneur. Some of the examples of Unicorns that have done incredibly well in developing the Indian economy are as follows:-

- 1- MEESHO-The Indian social commerce segment may be in an early stage at this point, but it is expected to grow at a compound annual growth rate of 55%-60% to reach a gross merchandise value of \$16 billion-\$20 billion by 2025.
- 2- CRED-With only INR 57 Lakh as operating revenue in FY 2020, Kunal Shah-led fintech platform CRED has entered the unicorn club at a whopping valuation of \$2.2 billion.
- 3- COINSWITCH KUBER-Bengaluru-based CoinSwitchKuber has become the second Indian cryptocurrency startup to join the unicorn club. The crypto startup closed its Series C round at \$260 million at a \$1.9 billion valuation.



8- Suggestions:-

1. The Government should empower simple accessibility of credits and innovations to the nation over.
2. The Govt. should take some mindfulness program like EDP's EGP'S etc in regards to new businesses in country and cross boundaries.

3. Multi window clearances: Budding business people need to make numerous innovations to government workplaces.
4. There formation of the variousIncubation cells and Startups cells.
5. Execution of the Multiplier Grants Scheme (MGS),Software Technology Park (STP) Scheme, Support for International Patent Protection in Electronics & Information Technology (SIP-EIT).

9- Conclusion:-

Startups can change the world and, more and more startups will grow with innovation and creativity in the coming years for sure. Entrepreneurship ecosystem is the only way to increase the economic development of a nation and world relations. And a small idea can be called a big innovative solution that can change your future. So if you have an idea, don't let the fear of failure and taking risks to block your dreams. Try developing your idea into a startup and contribute to the development of our country.

Now, we can conclude that startups are important for the economic development of a nation. We can conclude that startups are making a positive impact on the Indian economy. However, the government needs to promote and create more startups in India so that it helps in increasing the GDP and economy of India.The government is encouraging people to start doing new business and what steps are being taken for this that are good for the bright future of the startups industry and ecosystem diversity of India. And it will boost the Indian economy as well as GDP in the coming decade.

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Option Market Volatility - A Study of Indian Derivatives Market

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Abstract

The world has witnessed growth in international trade and business due to liberalisation in the past couple of years. This resulted in increased demand for international currency, financial instruments and fluctuation in interest rates, exchange rates and market-linked securities. These developments have exposed the financial markets to high risk and volatility. To combat with the adverse effects of a volatile market and manage the risk, new products called derivatives were developed. Anyone who is active in the financial world must have heard about the term 'Derivatives'. In simple terms, derivative is a contract between two parties whose value is derived from the value of underlying asset based on which the contract is made.

Derivatives (as it is referred to instead of derivative) have originated to ensure stability in exchange rates. The collapse of fixed exchange rates of currencies globally, the foundation for foreign exchange derivatives were laid during the initial period of 1970s. Equity derivatives originated in the later period of 1980s. With the application of Black and Scholes model, the pricing of derivative gained significance globally.

Keyword:- liberalization, risk and volatility, international currency, financial instruments, derivatives.

Introduction

"It is a financial instrument whose value is derived from the underlying asset".

So derivatives are financial products which have no independent values. The value of derivatives is derived from the value of another financial instrument to which they are linked.

For example, in case of Nifty futures, Nifty index is the underlying asset.

As per the Indian Securities Contracts (Regulation) Act, 1956, derivatives include:

1. Security derived from a debt instrument, share, loan (whether secured or unsecured), risk instrument or contract for differences or any other security.
2. A contract which derives its value from the prices or index of prices from the underlying securities.

Derivatives can be either a financial derivative or a commodity derivative depending on the underlying asset. If the underlying asset is a commodity, then it is commodities derivatives; if the underlying asset is a financial instrument, then it is financial derivatives.

An underlying asset

The underlying asset is a financial instrument or a commodity on which the value of the derivative is dependent. In simple words, we can say that it is an asset on which the derivative contract is written.

Following are some of the examples of an underlying asset:

- a. Stocks and share warrants
- b. Currency
- c. Index
- d. Interest rates
- e. Commodities
- f. Money market products
- g. Short-term securities
- h. Bonds

Features of underlying assets:

Following are the important features of an underlying asset.

- a. The value of an underlying asset changes continuously.

For example, currency is an underlying asset whose value fluctuates in the financial market.

- b. The value of the derivative is directly or inversely related to the price of the underlying asset.

For example, Put Option; if put option is entered by the option holder for a particular share, the value of which plummets during the option period, the put option demand increases with the fall of the concerned share price.

Section- I Implication of an Underlying Asset:

Derivative contracts are entered mainly because of following two reasons:

- To hedge against fluctuation in price of the underlying asset
- To speculate

In both the cases, implication of underlying assets is the same. *For example*, on 1st October 2016, an investor purchases 100 shares of IndusInd Bank Ltd. for 1200. It is expected that the value of the share will go down in future. Hence, the investor buys a put option (an option to sell shares at a particular price) to safeguard against loss due to price fluctuation at a strike price of 1,275 per share after two months. On 1st December, 2016 the share price drops in the market and hovers around 1,000 per share. The investor exercises the option and sells the shares at 1,275 on that date. Thus, he hedges himself from the loss due to decline in value of the underlying asset.

Similarly, a speculator apprehending a drop in price of IndusInd bank takes a long position with put options in the market on 1st October, 2016 for 1000 shares. At the end of two months when there is decline in the share price below the strike price (the price at which the option will be exercised), he closes the position and realises the gain (difference between strike price and market price).

Thus, hedgers use the derivative market to avoid exposure to adverse movements in the price of the underlying asset, whereas, speculators take position in the market based on such movements in the price of that asset. It is clear from the above example that the profit and loss positions of the derivative contract are wholly dependent upon the value of the underlying asset.

Section II Technical implication & Strategies

Applications of Options

Basic application of options is of two types, hedging and speculation. Hedging aims at reducing the risk a user perceives arising out of a commitment that is already there. Speculation is exactly opposite as the user willingly takes a risk in the hope of getting bigger reward.

Users of option contracts can be classified into Hedgers, Speculators and Arbitrageurs.

Hedgers:

A typical hedger could be an investor in a security, somebody involved in imports or exports, a borrower on a floating rate basis, a producer or a consumer of commodities or a long term investor in a company. It will be readily seen that the underlying in these categories will be equity, exchange rate, interest rate, commodity price and credit quality respectively. As the price of underlying changes constantly, there is an element of risk. To hedge, or neutralise this risk of an uncertain outcome, the hedger can choose to buy an options contract. It will be readily noticed that the hedger will always be a buyer of the option, either a put or a call depending upon the commitment.

Hedger would rather treat the options contract as an insurance and the options fee as the premium he is willing to pay to buy the insurance. Hedging by options leaves upside open i.e. if the underlying moves in his favour, the hedger gets a full benefit. This is not possible if a hedge

is created using a forward or a future contract. Hedging strategies using options contracts are discussed elsewhere.

Speculators:

A speculator understands the principle of *Risk and Reward* and that there is no reward without taking a risk. The speculator is willing to take a risk in the hope that the reward will follow. In the context of using options contracts to speculate, the speculation can be of three types - buy an option (LONG) , sell an option (SHORT) or do a combination (STRUCTURE) using both the call and put options.

Arbitrageurs:

There is a third category that comprises of very sophisticated traders who are essentially risk averse. They have the financial prowess to find out discrepancy in pricing across various financial instruments including options contracts. This discrepancy is then exploited by doing a series of trades not involving any price risk. This category of market users is called arbitrageurs and the trades that they do as arbitrages.

Option Strategies

There are different strategies called as options trading strategies that help the parties to the contracts to make gains. Given below are the basic strategies adopted by the parties involved in the options derivatives. Typically long option strategy talks about the payoff to the holder of the contract and short option is the payoff to the writer.

In the following paragraphs, different trading strategies are discussed which are commonly deployed by speculators to achieve their objective and try to get a return on their investment. It should be noted that in each trade, the speculator is trying to assume or take a risk in the hope of getting a bigger reward. It should also be noted that the speculator necessarily has a view on the expected movement of the market for the underlying and the trade that he or she does is consistent with this view. The examples given refer to options on equity shares. But these strategies are equally applicable to other underlying such as exchange rates, interest rates, commodity prices or credit quality.

1. Long Call :

A speculator / trader holds a view that underlying is likely to rise compared to the price prevailing today and therefore, he expects to make profit by buying today and selling at a later date. An options contract essentially provides a financial leverage i.e. enables the user to take higher risk with the same amount of investment. In a long position using a call option, the trader buys a call option by paying an upfront premium which gives him a right to buy the underlying share at the strike price on maturity. The premium is only a fraction of the share price and, therefore, for a given investment, the trader will get a much larger

exposure by buying a call option compared to the alternative strategy of buying the stock itself.

For example, a trader holds a view that Infosys is going to perform much better in future and its share price is likely to go up from its current price of ₹ 1,000. A European style call option ₹ 30. For an investment of ₹ 30, the trader will get a right to buy 1 share of Infosys after 1 month at a price of ₹ 1,000 irrespective of the then prevailing price in the market. Now, consider possible scenario at maturity. At what level Infosys price would prevail, is anybody's guess. If one examines a likely range of prices from say ₹ 900 to ₹ 1,100, it will be seen that the trader will make a profit on exercise of option as long as the Infosys share price is more than ₹ 1,000 at maturity. This will be the gross profit on the position and will have to be adjusted to the premium of ₹ 30 that has been paid to acquire this right. For example, if the Infosys share trades at a level of ₹ 1,050, the trader with a long position in a call option will make a gross profit of ₹ 50 (the difference between ₹ 1,050 and strike price of ₹ 1,000) and a net profit of ₹ 20 (₹ 50 adjusted to premium of ₹ 30). On the other hand, if Infosys share trades at a price of ₹ 950 at maturity, the trader has no incentive to exercise the option, as this price is below the strike price of ₹ 1,000. The trader will suffer a loss of ₹ 30 which is the non-refundable premium he has paid up-front. The table and accompanying graph in figure 3.2.1 summarise the trader's profit or loss position for a range of ₹ 900 to ₹ 1,100. This graph is often referred to as the Option Pay-off diagram.

- The trader potentially makes an unlimited profit as the Infosys share, in theory, can trade at infinity. On the other hand, the trader will suffer only a limited loss (to the extent of premium paid) should Infosys share trade at a level below the strike price of ₹ 1,000.
- It should also be noted that the trader will break-even (i.e. make no profit or loss) if Infosys share trades at a price of ₹ 1,030 at maturity.
- The trader had made an investment of ₹ 30 and will achieve a decent return on this investment if his views are proven correct. He is also playing it quite safe since the maximum loss he will suffer is ₹ 30.
- If the trader had bought the underlying share itself, he will need to make a far higher investment of ₹ 1,000 and return on investment will be far lower under identical scenario.
- Long call is a very basic option trading strategy involving limited loss and unlimited gain. It is quite popular amongst amateur traders who are new to the exciting world of option trading. It is also a very safe strategy.

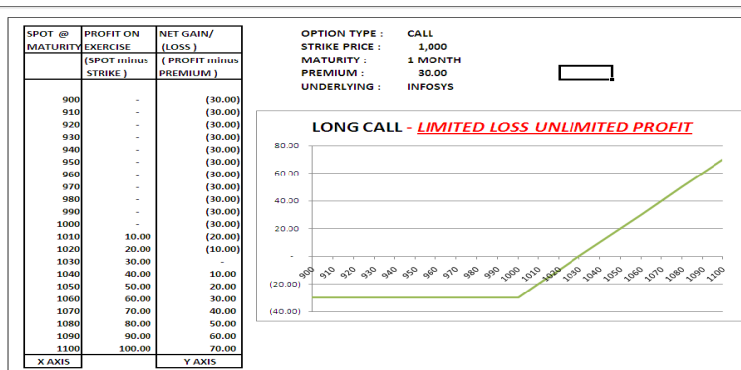


Figure 3.2.1: Options Pay-off Diagram

2. Short Call :

A trader holds a view that the underlying is likely to be weaker in future and will trade at a much lower price compared to the current price. One obvious trade that he can do is to sell the underlying today, the precondition for which is that he must own the underlying today. An alternative way of profiteering from the view is to sell a call option on the underlying. This would mean an immediate income for the trader in the form of premium received. The trader, however, undertakes a far higher potential risk if his views are proven to be incorrect and the underlying rises, instead of falling.

Consider a trader who holds a view that Infosys share is likely to trade at a much lower level compared to its current level of . 1,000. The trader will sell (write) a European style Call option on Infosys share. The current premium quoted in the market for such an option with a strike price of . 1,000 and a maturity of 1 month, is . 30. The trader will receive a premium of . 30 per share of Infosys, in return for an obligation to sell Infosys share at a price of . 1,000 at maturity regardless of whatever price that will prevail then. The right of exercise will vest with the buyer of the option.

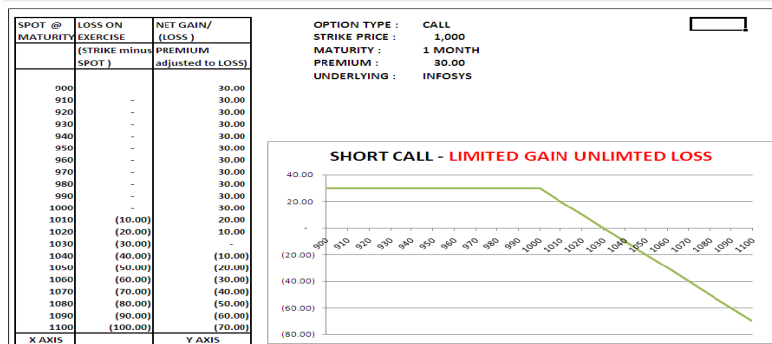


Figure 3.2.2: Short call limited gain unlimited loss

This diagram taken from my own notes

Variables Affecting Options Contract

Options contract price is affected by variety of factors in the financial market. Important factors affecting the options price are as under:

Spot Price:

Options price is made up of intrinsic value and time value. For a call option, intrinsic value is the difference between strike price and the current price of the underlying asset. (Intrinsic Value of the asset = Spot price of the asset - Exercise price of the asset)

Call option: Higher the spot price of the asset relative to the exercise price, higher will be call options value. In the above equation, if the spot price moves up and exercise price remains unchanged, the intrinsic value goes up and hence the options value will also go up.

Put option: Lower the spot price of the asset relative to the exercise price, higher will be put options value.

Thus, we observe that spot price of the underlying asset is an important factor which affect the option price. As the spot price increases, the call option's price will also increase and put option will lose its value.

Exercise Price:

For a call option, lower the strike price, the call option will be more beneficial for the buyer and vice versa for a put option. Options at higher exercise price will be preferred by put buyers since they can sell the underlying stock at higher prices.

Time to expiry:

Normally option buyers believe that price fluctuations in the future may make the option profitable even though the price may be unattractive today. Therefore, the longer is the time to expiry, the greater is the probability that at expiry, the underlying asset price will be significantly different from the exercise price. Hence, higher will be the option's price which has longer time to expiry.

Volatility in the price of underlying asset:

The movement in the asset prices is termed as volatility. The greater the volatility in price of underlying asset, greater is the chance of the asset rising largely over the exercise price in case of a call option and below the exercise price in case of a put option. This makes the option more valuable for its holder.

There is also a possibility that volatility may lead to a steeper fall (in case of call option) or rise (in case of put option) in the underlying asset price. However, in such a scenario, option buyer will not exercise his option to buy / sell the underlying asset.

Interest rates:

Interest rates also affect the option prices. When an investor buys a call option instead of the stock itself, he pays only the premium and does not buy underlying stock. So the investor can save capital that can be invested in a risk-free asset. Consequently, higher the rate of interest, the higher will be the value of a call option, vice versa for put option.

We can summarise the effect of each factor on the options value as given below –

Factor	Value of call options	Value of put options
Increase in underlying asset's value	Increases	Decreases
Increase in strike price	Decreases	Increases
Increases in variance of underlying asset	Increases	Increases
Increase in time to expiration	Increases	Increases
Increases in interest rates	Increases	Decreases

Section III Conclusion

There are basic two applications of options namely hedging and speculation.

1. While hedging aims at reducing the risk a user perceives arising out of a commitment that is already there, speculation is exactly opposite as the user willingly takes a risk in the hope of getting a bigger reward.
2. Factors affecting options price include – spot price, volatility in the price of the underlying asset, interest rate, exercise price and time to expiry.
3. The Black Scholes Merton Model for Option Pricing is a mathematical model of a financial market containing derivative investment instruments. From the model, one can deduce the Black–Scholes formula, which gives a theoretical estimate of the price of European-style options.
4. The Greeks are the terms used to better understand the risk in options contracts by measuring its price against other variables. This sensitivity is calculated using one of the Greeks like delta, gamma, vega and theta.
5. A future contract is an agreement between two parties to buy or sell an asset at a certain time in the future at a certain price. While, an option gives the buyer of the contract the right, but not the obligation to buy (or sell) a certain asset at a specific price at any time during the life of the contract.

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Various emerging technologies and its applications in shifting learning from offline to online after the pandemic

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ABSTRACT

Online learning has already received a huge boost from artificial intelligence, if only by association artificial intelligence is a tool to enhance e-learning rather than a replacement for human touch. Augmented Reality is eco-friendly which makes learning an experiential approach. With 5G connectivity, teachers can make the most of AR and virtual reality in all areas of study

According to a survey conducted by the School of Education, 75% of teachers believed that learning from digital content would replace textbook learning. To assure the learners about technology-driven methods, some technological wonders are in trend nowadays. Artificial Intelligence (AI), Learning Management Systems (LMS), Augmented and Virtual Reality, Gamification, Blockchain to name a few.

Keywords: Online Learning, Pandemic, Covid-19, Artificial intelligence, Augmented Reality (AR), Blockchain, Gamification, 5G Technologies

1. INTRODUCTION

Every coin has two sides, similarly each and every situation in life whether it is good or bad teaches us something, and especially when it is bad situation there is always an opportunity to rethink or rediscover, every crisis requires society to renew itself. The Covid-19 pandemic and the social distancing that followed have affected whole society, also education. In order to keep education running, there was only one way for the education institution to migrate from offline education to offline education at the earliest. This has resulted in an extraordinary push to online learning. Many, digital platform providers, have

provided their support and solutions, so that there is no obstacle of any kind in the can effect education. These rapid moves from classroom to online teaching gave new challenges for teachers, students and for their parents. Whatever new technology contributed to online superintendence during the time of the Covid, a lot has changed since then. In today's time we can say that virtual education gave birth to new education system and with many new platforms and new technology, online education is neck to neck competition to offline education as well.

According to a poll conducted by the School of Education, 75% of educators believed that textbook learning will be superseded by digital content learning. To convince students about technology based methods, certain technological marvels are trending these days.

To name a few are Artificial intelligence (AI), Learning Management Systems (LMS), Augmented and Virtual Reality, Gamification, Blockchain.

2. AMALGAMATION OF ARTIFICIAL INTELLIGENCE IN (AI) IN EDUCATION

Whether education is offline or online, students love interactive classes where they don't feel saturated. AI has the ability to make classes feel interactive, without overwhelming people. Artificial intelligence can help create such an interesting, useful platform. The changed world does not limit the age group for learning, and so there are myriad and varied ways of educating oneself through AI. Online education has already received a huge boost from AI, if only by association. Major online learning resources like edX, Udacity, Coursera, Udemy, were born out of the nation's top AI labs and founded and managed by AI experts. AI-powered modules are popping up online in every field of education.

AI ensures that each student receives personalized attention without the human staff that would otherwise be required. Adaptive learning is able to provide personalized learning for each student by processing large amounts of data and responding accordingly to student needs. Instead of everyone starting from the same place or following the same curriculum, AI can assess where the knowledge gaps are and provide the resources/assessment necessary to help everyone excel. Adaptive learning removes the need for a one-size-fits-all approach to corporate training and eLearning.

AI can help make online courses more efficient, compact and customized, in the other words learner can improve in better ways more often.

How Artificial Intelligence is transforming the eLearning industry

AI is an enhancement tool for eLearning, rather than a replacement for the human touch, and its set to allow educators to provide the best experience possible for students.

Artificial intelligence also makes eLearning more accessible to students with disabilities as well. There are artificial intelligence systems that can describe photos for the visually

impaired, automatically generate closed captions for videos, assist with text-to-speech reading, and control an on-screen mouse and keyboard.

These systems will open up new opportunities for those previously unable to study, either in person or online, meaning eLearning will become a truly accessible learning path for anyone looking to improve their skills. Artificial intelligence is a tool to enhance e-learning, rather than a replacement for the human touch, and is set to empower educators to provide the best possible experience for students.

Artificial intelligence also makes eLearning accessible to students with disabilities.

Augmented reality is environmentally friendly, making learning an experiential approach, the explicit role of which is student engagement, understanding of abstract concepts, and hands-on experience in the virtual mode.

This technology-driven information is added to the existing environment, while virtual reality creates an entirely new environment.

3. EFFECT OF AUGMENTED REALITY (AR) & SIMULATIONS

Augmented reality is environmentally friendly, making learning an experiential approach, the explicit role of which is student engagement, understanding of abstract concepts, and hands-on experience in the virtual mode.

This tech-driven information is being added to the existing environment while virtual reality is creating a whole new environment. AR can increase student engagement by allowing students to more proactively and authentically participate in educational content rather than being passive recipients of information. Learners can truly immerse themselves in training and lessons and gain live practice and context to help them more thoroughly acquire the fundamental skills and knowledge of a particular subject or task.

In the AR app, you can download the latest data and view it in an interactive format.

In cases where specific equipment needs to be explored and learned how to use it, an augmented reality application can present the required 3D model and helpful explanations

In such cases as anatomy classes, students no longer need to dissect real animals; this can be accurately simulated using software. Students get the same level of practice without hurting themselves or working with dangerous tools.

For example, school students can explore such complex scientific disciplines as biology, anatomy, physics and even mathematics in a more interactive and interesting way. In addition, the application of augmented reality in the elementary classroom can simulate various cases that are difficult to explain and even help develop children's creativity.

Whether students want to study humanities or technical sciences, augmented reality solutions for the university can be very useful. For example, medical students can learn anatomy and practice examining the body using an AR app representing the human body inside and out. Additionally, many universities are using augmented reality to teach engineering, math, design, astronomy, and more to students.

4. BLOCKCHAINIMPROVES

E-LEARNING

Blockchain takes its name from digital databases or ledgers, where information is stored in the form of "blocks", which together form a "chain".

NEP-2020 has proposed the concept of Academic Bank of Credits (ABC) in which higher education institutions will digitally deposit the credits earned by the students. Institutions and universities can use Blockchain based cloud services to store essential information such as courses, records, required regulatory documents and other information.

Blockchain can provide us with an excellent framework for keeping track of student records. From day-to-day information such as homework, attendance, and extracurricular activities to longer-term information such as the degree and college they attended. Blockchain technology can ensure that each teacher or student is given a unique ID, stored in a decentralized ledger, so the certificate/degree is immutable and protected from any damage.

In addition, students can upload their assignments and projects using the Blockchain, which will ensure that there is less scope for plagiarism. Using smart contract concept on Blockchain, Instructor can generate exam paper with answer key and scoring pattern. Students can take exams digitally and the Blockchain can be used to grade the responses.

It is an effective way to transfer online records, student records can be made easily accessible to the new institution when moving from one institution to another.

This can also be extended in cases where the grades of students, who go to other institutions as part of exchange programs, can be easily shared across institutions by providing the necessary access.

5. USAGE OF 5G TECHNOLOGIES IN EDUCATION

4G internet is known to struggle when using VR and AR which can affect the learning experience of the students. Features of 5G network environment such as its large bandwidth, ultra-high reliability, ultra-low latency, large-scale IoT, and so on

With 5G connectivity, teachers can make the most of AR and Virtual Reality (VR) in all areas of study and on select field trips, giving students the opportunity to understand what they are learning.

For example, although it would be impossible to excavate the core of the Earth, students can use AR and VR to see each layer in a more realistic and interactive representation than in a textbook.

IoT devices such as smart sensors or video cameras can be used to bring the outdoors into orbit. Anyone traveling can join the classroom in real time and create virtual vacations with high level learning experiences for all.

6. GAMIFICATION IN EDUCATION

Consistent online learning can be boring. Gamification can be defined as the use of game elements in non-entertainment contexts to promote learning. Gamification elements such as gift cards, scratch cards, discount coupons as rewards are used throughout the learner's journey. Coupons received by the learners can be used to buy further new courses, thereby confirming an increase in learner retention on the platform. Gamification can also be defined as a set of activities and procedures for solving problems using the features of game elements.

The goal is to maximize enjoyment and engagement by capturing the interest of learners and inspiring them to continue learning. For example, in-game principles and themes such as acquiring virtual 'points' or other currency, and completing series of tasks. In other words, it 'makes the hard stuff more fun', helping to motivate students and make them more engaged with the subject matter.

Gamification can be remarkably effective in e-learning. Various studies found that users of learning simplifications scored higher in fact- and skill-based assessments of learning. Retention also improved when gamification was used in the workplace.

7. CONCLUSION

In conclusion, education will experience a huge level of transformation from many emerging technologies. Students can make better use of each of the above technologies by looking into each one. By exploring each one, they will gain special insights into how they can get the most out of their use. On the other hand, teachers can use online course platforms to improve the learning environment.

This article aims to achieve this by providing key details of the technology. As a student, you should be prepared to embrace technology to enhance your learning experience. After all, we know that there's a lot to digest when it comes to education technology trends. However, keep in mind that technology has penetrated education and reinvented its entire teaching and learning process. In particular, eLearning, an educational tool that not only increases the accessibility and convenience of education, but also changes the way students learn and their desire to learn.

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Title page must include the title of the paper (not more than 15 words), authors' name(s), affiliation, email id and phone number. Other than title page, authors' name(s), affiliation, email id and phone number should not appear anywhere else in the paper.

MAIN DOCUMENT

The principle divisions of the manuscript should appear in the following order: body of the article (Abstract, Keywords, Introduction, Literature Review, Research Methodology, Analysis, Findings, Conclusion etc.), references and appendices. Abstract (limit 250 words) should be included in the main document of the manuscript. There must be title of the paper at the top of this page. Footnotes, tables and figures must be numbered with short description and must be placed within manuscript. The body of the article begins immediately on page 1. The title of the paper should appear at the top of this first page. It should be centered, bold-faced, and in all capital letters. Number all pages, including those with references.

HEADINGS

Main headings should be used to designate the major sections of an article. Within the main body of the paper, the major headings typically include such things as INTRODUCTION, METHOD, RESULTS, and DISCUSSION. Supporting material, such as references and appendices are also treated as major headings. In all cases, major headings should be left-aligned, bold-faced and typed in all capital letters. Secondary headings should be typed with the left margin, in title case (small letters with major words beginning with capitals), and in bold.

TABLES AND FIGURES

Number tables and figures consecutively (one series for tables, one for figures) from the beginning to the end of the article. Indicate the position of each in the text.

CITATIONS

Giving proper credit to the sources of original ideas and previous work is an important aspect of good scholarship. Inappropriate or inaccurate citations do not do justice to the authors cited and can be misleading to readers. Citations must be in alphabetical order.

Example: Several studies (Ferris & Kacmar, 1992; Malhotra & Bazerman, 2008; Morrison, 1993a, 1993b) support this conclusion.

Also note that two or more works by the same author (or by an identical group of authors) published in the same year are distinguished by "a," "b," etc., added after the year. If a work has two authors, give both names every time the work is cited in the text. If a work has more than two authors, use "et al." after mentioning the name of first author.

Example : Emotional exhaustion is related to work attitudes (Cropanzano and Byrne, 2003).

.. exhaustion was also related to job performance (Adams et al., 2008). (For more than 2 authors)

REFERENCES

References must be in APA style.

Examples:

Goggin, W. C. (1974). How the multi-dimensional structure works at Dow Corning. *Harvard Business Review*, 55(1): 54-65.

Katz, D. and Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). New York: Wiley.

Duncan, R. G. (1971). Multiple decision-making structures in adapting to environmental uncertainty. Working paper no. 54-71, Northwestern University Graduate School of Management, Evanston, IL.

Wall, J. P. (1983). Work correlates of the career plateau. Paper presented at the annual meeting of the Academy of Management, Dallas, TX.

Smith, M. H. (1980). A multidimensional approach to individual differences in empathy. Unpublished doctoral dissertation, University of Texas, Austin.

APPENDICES

The appendices present lengthy but essential methodological details, such as explanations of the calculation of measures or items in a new survey instruments. Presentation should be concise but not abbreviated. Each appendix should be treated as a major heading. The title of each appendix should be typed in all capital letters, centered, and bold-faced. Multiple appendices are APPENDIX A, APPENDIX B, etc. A single appendix does not require a letter.

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