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National Conference

on

"ARTIFICIAL INTELLIGENCE IN BUSINESS & TECHNOLOGY"

31st August 2018 - 1st September 2018

Organized by

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PRINCIPAL MESSAGE

We are happy to inform that Jain College – CGS, is organizing National Level Seminar on ARTIFICIAL INTELLIGENCE IN BUSINESS AND TECHNOLOGY on 31st August & 1st September 2018. I thank the Chairman, Director, Dean and all the faculty members in this regards.

I am happy to inform Shanlax International Journal of Arts, Science & Humanities with ISSN – 2321-788X [Impact factor 3.025] have accepted to publish our seminar proceedings and research papers.

On behalf of the Management, Director & Dean of Jain College, I duly acknowledge the effort of Shanlax International Journals and conference convenors Prof. Anita Kurian, Prof. M.S.Shruthi, Students in charge Mr.Samay Achwani & Ms.K.S.Amritaa for their untiring effort to the conference. I also extend my heartful compliments to all the Teachers, Student and Participants for their efforts in writing research articles.

All the very best

Prof. Naveen Kumar C M
Principal, Jain College - CGS

PREFACE

Welcome to the special issue on a current topic 'Artificial Intelligence'- a multidimensional phenomenon encompassing all the areas like Business, Technology and Economics. Artificial Intelligence also called machine learning where robots are designed to perform tasks of human smartness such as reasoning, drawing conclusions, generalizing and also learning from historic track records.

Making machines perform in these task can help in accuracy, savings time and cost involved.

Artificial Intelligence is rapidly advancing enabling all those who have access to it. Day to day life is changing with smarter technology. Artificial Intelligence promises the world free of errors. Artificial Intelligence in business has enumerous benefits of handling huge data on a single go giving customers a quicker solution without human interface. This is going to have a significant impact in reshaping our future digital path. Intellectual behaviour of Machines is going to be inevitable for all businesses at different scales of operations.

Artificial Intelligence has the power to change the way we do Accounting,Income Tax, Marketing, Finance, Banking etc. Artificial Intelligence will also have the significant impact on employment and economic development of a country. In an area where artificial intelligence is used in biometrics, face detection, automation etc.,it is very important for us to understand the applicability of artificial intelligence in various fields.

This edition of the journal hopes to throw light on how Artificial Intelligence can be applied in all fields.

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A Study of AI in Empowering Banking System

Salahudin Mohammadi
AIMS Institute of Higher Education, 2018

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Abstract

Since 1956, Artificial Intelligence has been around as the subfield of Computer Science dedicated to development of programs to enable computers behaving by the ways that can be represented as intelligent. The word artificial intelligence (AI) initially used and coined by John McCarthy and defined as "The science and engineering of making intelligent machines".

Keywords: NLP (Natural Language Processing), Speech Recognition, NLG (Natural Language Generation), Deep Learning, Machine Learning, VR (Visual Recognition)

The development and study of AI has been fascinated and under focused discipline in recent, to date the utilization of AI inevitably raised as an irrefutable truth in different fields that shows its comprehensive nature to shape a new face of world and make the opportunity for humans to most challengeable tasks in future of technologies.

The banking and business domain also has not been quiet from, launching of various processing programs in space of customers led to powering the modern methods of banking and integration of AI as valuable virtual assistant to consumers being exposed by for business and usual solutions.

The use cases of AI constantly changing, but banks are concentrating on three main applications; 1. Building a better customer experience, 2. Reducing costs, 3. Streamlining risk operations, that will be applicable by providing the platforms of using Speech Recognition, Deep Learning, Machine Learning, VR (Visual Recognition), NLP (Natural Language Processing), NLG (Natural Language Generation),

Recently a notable majority of consumers believe AI can reduce the time it takes to get answers tailored to their preferences, as well appreciate to pay a premium for a hybrid AI system that also offers direct access to humans.

Eventually the use of AI besides its great and high performance, gradually challenge the employment rate with tangible change among different job markets. So, this ungovernable progression will be durable or take a stop flag as a risk signal in upcoming future?

Objectives

1. To explore role of AI in progression of banking system.
2. To look into different cases on utilization of AI in progressive banks.
3. To examine influence of developing AI on employment.

Methodology

The present paper under title of Study of AI in empowering banking systems made by collecting relevant data and information that is corresponsive to the discussion of paper and all are based on relevant books, journals, newspapers, statistical facts and case studies that already published.

ARTIFICIAL INTELLIGENCE (AI) developed as a profound functional subfield of computer science and proliferated in various disciplines andoperational fields based on its high usage and working.Since AI defined "The science and engineering of making intelligent machines" (John McCarthy, 1959) it madea considerably revolution and development in empowering of processing systems.Banking system is one of the affected and under focused domain of AI that overallhad a substantialand helpful progression toward the more efficient services for customers. Basically the banking system in East and pacific passed its inclusive way and has different methods that can alsodetermine their capacities in acquiring of AI in system of processing and analyzing.

There are three main types of banks: Central banks, Investmentbanks and Retail banks. Central banks operate in high sort of making decision and managing of monetary system and establishing of a general plan of action for other banks. while it is only the investment and retail banks that are directly in interact with customers and giving services, soof courseAI brought banking and industry surmises following definition: "Artificial Intelligence is an area of computer science that emphasizes the creation of intelligent machines that sense, comprehend, reason and act to emulate human behavior.

Some the activities that computers with AI are designed for include image and speech recognition, learning, planning and problem-solving. Example of applied AI technologies include (but are not limited to): machine learning, deep learning, predictive/prescriptive analytics, virtual agent and natural language understanding technologies (Siri, Alexa, Google, Home, Amelia etc.). (Infosys, Finacle, 2017).

AI Building Blocks

for designing and assembling AI systems ten building blocks are essential, often AI simplest use case is consisting of a single building blocks, but in most of times more than one blocks combine together and modified to create a customized application, the building blocks organizes according to either be relevant to data, to processing, or to action.

Data

- Machine vision: Detecting faces and objects in images
- Speech recognition: Transforming spoken words
- Natural language processing: Detecting the intent in a text-based command

Processing

- Information processing: Reasoning by analogy to related concepts
- Learning from data: Learning to drive car from recorded data
- Planning and exploring agents: Building a map while exploring the environment

Action

- Image generation: Modifying faces in a picture
- Speech generation: Providing speech to avirtual assistant
- Handing and control: Picking up novel items
- Navigating and movement: Avoiding obstacles as an autonomous vehicle

The six key technologybuilding blocks for empowering and banking solutions has its popular applications in banking that often they called with their synonyms also and there is briefly a clarification of them.

Popular Applications in Banking

- machine learning: in banking machine learning finds applications so neatly such as customer services, fraud/risk management, personal wealth management. Mostly it can be used to identify fraud or vulnerability of system in its payment.
- Deep learning: by its multitude ways of apply in banking process, it can be used to check fraud by considering typical behavior patterns of user and largely judgment on basis of the amount of transaction. Useful for finding business opportunities as deep learning can help banks access relevant promotions and customer information and behavior on social networks from their preference and wants. For instance, Amazon and Alibaba.
- Natural language processing (NLP): banks are using this to examine and exploring of customer attitude toward the brands and offerings being exposure from social media conversations. NLP can lead to providing faster and more efficient customer service through AI-based digital assistants that ultimately, system would learn customer and agent behavior to settle same issues automatically.
- Speech recognition: help banks to enable more efficient authentication by offering voice option to customers. Besides its ease of use, is a natural correspond for securing payments.
- Natural Language Generation (NLG): mainly used to generating awareness or answer in an understandable form and it has to be assembled from various sources to be responsive for customers. For instance, Amelia.
- Visual recognition: authorize bank customers to pay bills by simply taking a picture using their smart device. Australian bank was the first to allow customers to activate a new card through their smartphone cameras, including several banks like Bank of America, Citibank, Wells Fargo, TD bank etc.

Regarding to application of building blocks, a set of Case study from different banks include of Indian banks that share their experience of utilizing brought here for better grasp.

1. Case example: DBS Bank

Singapore's DBS Bank is using an AI-powered Virtual assistant called KAI to enhance the experience at digibank, its mobile-only bank in India. KAI can understand language the way humans speak it, this will help digibank to reply to thousands of customers queries and in consequence they (customers) can fulfil banking transaction in real-time, anywhere and anytime.

2. Case example: ICICI Bank

India's ICICI Bank has deployed software robotics in more than 500 business processes, covering a million banking=g transactions every day. It is the first bank in India to do so.

The use of software robotics has cut the time taken to respond to customers by 60% and increased accuracy to 100%. The robots, which are working in variety a variety of retail banking operations, as well as in treasury and human resources management among others, capture and interpret information, recognize patterns and run processes to perform functions like data entry and validation, automated formatting, text mining, reconciliation and exchange rate processing etc.

Important areas of AI application

As discussed in before parts, AI has a comprehensive application into several banking process that building blocks are the mediums to cover the various demand and tasks of customers and in consequence, answer their inquiries and wants. The process generally has front, middle and back office levels in glimpse that perform these operations.

1) Front Office

Customer service
Sales and marketing
Wealth advisory and financially assistance

2) Mid Office

Risk assessment
Fraud detection/AML
Credit scoring

3) Back Office

Settlements processing
Cash & liquidity management
Reconciliation

3. Case example: Front office, Swedbank Nina

At Swedbank Group, an intelligent virtual assistant named Nina is rendering conversational customer service to help customers and agents help themselves. Customers type their queries via the website and Nina helps them find answers and also products and services best suited to their needs.

AI and Employment; Since its Emergence & Developing

AI are taking every industry by storm since it arises and make significant role in making tasks and processes better. Most of jobs are going to get automated sooner than we think and this acknowledged by a statement of Elon Mask (CEO & Founder of Tesla & SpaceX) where he said "AI powered system and automation technologies are going to replace most human jobs very soon and all countries may have to adapt universal basic income programs for their citizens to cope with aftereffect of this revolution." At this time whereas AI need language programmers to create algorithms to automate the processes and it means AI itself create job opportunities to Tech markets but, AI-powered system has the ability to reach a point where becomes able to program itself, again exposure humans in situation to replace their jobs in favor of AI eventually.

For instance, Fukoka mutual life insurance in Japan sated that more than 30 of its employees will be replaced with an AI system. In addition, Fukako mutual life insurance brought in an AI which costed them £1.4m but, the company's expert say that it would be saving £1m yearly while it need routine and unplanned maintenance that costs about £100k a year as company reported.

Jobs that are Vulnerable to AI Revolution

Based on a widely acclaimed study, there are a set of jobs which are vulnerable to AI revolution, Carl.B Frey & Michael Osborne found out the probability of automation for 702 jobs and led to the result that 47% of employees in America are at higher risk of losing jobs. It warned the employees working in transport and logistics (Taxi drivers and couriers to be replaced by self-driving cars and car pools), security office support staff (security guards and front desk officers to be replaced by computerized check-ins and securities), and sales and customer support staff (cashiers, telemarketers, call-centers assistant, clerks are to be replaced with chatbots and machines). (JOHN BARNETT,2017)

Conclusion

I argued the development of artificial intelligence in domain of banking system and more focused on how facilitate the various banking system processes, in addition to the capacity of banking system that has been able for AIindustry and applications. by the end of all progression,Impact and influence of AI on employment that is the main challengeable problem on the way of AI development as by some steps of developing reaches to singularity and somehow anautocracy discussed and obviously understood that approximately for next three decades when the population is expected to reach 9.8 billion people and over 6 billion of them will be working age while we are already struggling with finding decent employment for 71 million young people worldwide.

AI will govern the Tech markets rather than our today perspective towardsemployees and employment problem.

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A Study on use of Artificial Intelligence for Stock Market Prediction - An Exploratory Research

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Abstract

Stock market predictions are driven both by data published by stock exchanges as well as human behaviour (behavioural finance). To a large extent human interventions in a decision making process may lead to wrong judgements there by resulting in losses to the investors. Institutional investments are more risky since it involves huge money of large no of investors. This has led to need for more predictive behaviour: which could best be achieved through artificial intelligence. Artificial intelligence helps in conceiving large quartiles of data there by making investment decisions more accurate. It summarizes the findings of systematic approach over building trade system and an application of artificial intelligence (mainly genetic algorithms and neural networks). To find out the best solutions while the use of artificial intelligence principles gives traders a powerful tool in building robust trading system. This study pertains to historical data as well as the conclusions derived from analysing other textual data including quarterly results and press release.

Keywords: - Behavioural finance, Artificial intelligence, genetic algorithms, neural networks, stock market prediction, predictive behaviour.

Stock Market in Global Scenario:

In present era of liberalization, Privatisation and globalisation the international investments and diversification of portfolio internationally is an important issue, especially in the time period when stock markets are highly volatile, normally people invest in the stock market with purpose of earning returns. An investor designs his portfolio in which he includes different stock or group of stock in sectorial basis to achieve his purpose of maximum returns with minimum risk. International diversification can be an option as rationale behindthat stock returns within a country can be highly correlated because of similar investment but internationally conditions can different on account of economic, political system like tax, tariff. International stock conditions behaviours are entirely different. American stock market fluctuations can affect many EU countries and other countries. Gulf countries stock market effects on all other countries especially the petroleum products.

Stock Market in Indian Scenario

India is the fastest Growing country among other countries. Indian stock market will definitely influence in global scenario. Indian political system in such a way that the stock market fluctuations are predominantly focusing on economic environment.

Emerging markets are an alteration place for investment because of various reasons like open market system, liberal guidelines towards FDI & FII. At the time allocation of fund in internationally diversified portfolio, an investor would like to compare returns in market.

Indian markets are about three times more volatile as compared to other emerging markets and almost five times more than the volatile in developed markets functions on two major stock Exchanges BSE and NSE,

Players in Stock Market

There are many investor will predominantly invest in the stock market investors like:

- Sole Traders or Individuals
- Partnership Firms
- HUF's
- Companies
- Co-operative Societies
- Mutual Fund Companies
- Statutory Organisations.

Reasons for Investments

There are various reasons for investing in stock markets, it various from player to player-depends on the attitude of the investors. Usually individual investors seeks for security from losing the money, where companies will expects more returns. But it is different in case of mutual fund companies because they need balance both risk and returns where there are dealing with others money. Fund managers always go for experts analysis regarding investments, so our paper is mainly concerned with stock market prediction which more suitable for the fund managers (mutual fund companies).

Trading Off between Risk and Returns

High risk is associated with greater probability of higher returns and lower risk with a greater probability of smaller returns.

This trade off which an investor faces between risk and returns consideration investment decisions is called the risk return trade off.

Techniques need for investment decision

In stock market investment an investor focuses on various investment decision like:

- Sensitivity analysis
- Scenario analysis
- Decision tree analysis
- Break even analysis
- Risk adjusted discount rate method
- Certainly equivalent analysis

How behavioural Finance Plays Major Role in Investment Decisions

Behavioural Finance is a relatively new field that seeks to combine behaviour and cognate psychological theory with conventional economics and finance to provide explanations for why people make irrational financial decision.

Human psychology plays an important role in how individual make investment decisions. Investors are more realistic in taking decisions they behave in such a way to make profit always.

Financial theory suggests investors to take rational decisions during the investments. The investors will necessarily analyse the risk during buy or sell of the same in various dimensions.

Role of Artificial Intelligence in Stock Market Prediction

Technology, Machines are a part of our humanity. We created them to extend ourselves and that is what is unique about human beings- Ray Kurzweil.

Tools of artificial intelligence in stock market prediction:-

1. Artificial Neural Network
2. Genetic Algorithm

Artificial Neural Network (ANN)

An Artificial Neural Network is an information processing model that rose from the desire to artificially stimulate as per the structure and functions of biological nervous system. It is made up of a large number of highly interconnected processing element working together to given problem specific solution. These elements are called as neurons, the network displays adaptive learning and linear in nature. ANN is used for applications specific to the needs like pattern recognition or data classification through the process of learning.

The first practical application of ANN was done in the late 1950's by Rosenblate 1958 on the perception.

The neurons are the basic information processing unit of any neural network. It is made up of

A set of links with weights W1, W2, W3, W4 ……Wn.

A linear combines adding function for calculation the inputs with weights

$$U = \sum_j^m =$$

An activation function

Y= (v+b)

There are Three Types of Learning

Supervised Learning: in this type of learning, network is provided with input and output pairs to train the network. Once the training is completed the network would be able to map unseen input appropriately.

Unsupervised Learning: the network has to figure out a pattern with inputs provided without any external help.

Reinforcement learning: it is similar to supervised learning. It provides some kind of feedback that help in error calculation. However it would not provide exact target but instead would give a value based on system performance.

General implementations for predicting stock price using ANN

The input variables that are usually considered for the last date are

- Opening stock price
- High value of stock price
- Low value of stock price
- Stock value
- Closing price

Genetic Algorithm

Genetic Algorithm are problem solving method that mimic the process of natural evolution unlike ANN, designed to function like neurons in the concepts of natural selection to determine the best solution for a problem.

In the stock markets, genetic algorithms are most commonly used to find the best combination values of parameters in a trading sale, and they can be built into ANN models designed to pick stocks and identify trades.

How Genetic Algorithm works in stock market

Genetic Algorithm are created mathematically using vectors which are quantities that have direction and magnitude. The parameter for each trading rule are represented with one dimensional vector that can be thought as a chromosome in genetic terms. It also includes moving average convergence divergence (MACD), an exponential moving average (EMA).

Curve fitting are designing a trading system around historical data rather than identifying repeatable behaviour, it represents a potential risk for traders using genetic algorithm.

Bottom Line

Genetic algorithms are unique ways to solve complex problem by harnessing the power of nature. By applying these methods to predicting securities prices. Traders can optimise trading rules by identifying the best values to use for each parameters for given securities.

Strategies of Genetic Algorithm

Pairs trading

This is a long short ideally market neutral strategy enabling traders to profit from transient discrepancies in relatives value of close substitute. In this law of one piece can guarantee convergence of process.

Delta neutral strategy

It describes a portfolio of related financial securities in which portfolio value remains unchanged due to small changes in the value of underlying.

Strategies that only pertain to dark pools

It is an alternative trading system that are private in nature and thus do not interact to provide hidden liquidity to large blocks of securities. The dark pool trading plays anonymously with most orders hidden.

Objectives of the Study

- To access predictability of stock market by using neurolistic approach
- To evaluate neural networks support vector machines.

Review of Literature

1. Application of Artificial Intelligence and Data Mining Techniques to Financial Markets (PETER KONCZ)
   Here in this paper author explained about role of artificial intelligence data collecting and how artificial intelligence can be used in stock market predictions. This paper concluded with the tools which are used in data mining and financial markets, but no comparison of behavioural finance and implication of artificial intelligence tools.
2. The use of artificial intelligence in building automated trading system (Jan juricek)
   This paper dealt with use of artificial intelligence in to improving the results of automated trading systems on stock markets. The article introduces the reader with the concept of long term success in trading in financial markets. It defines general fundamental and mainly technical approach of building automated trading system as well as its components, risk management, entry and exit strategy and money management. This work is focusing on systematic approach and components.

Conclusion

The paper is concluded that ,here we tried to focus on the tools of artificial intelligence (Neural Network and Genetic Algorithm) are more accurate predictors than behavioural finance. Implementation of these tools have been done in foreign stock markets, this paper is just a comparison of behavioural finance and artificial intelligence.

A Study on Artificial Intelligence in Financial Service

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Abstract

Artificial Intelligence is defined as 'Intelligent Agents' and sometimes called as 'Machine Intelligence', it is an intelligence demonstrated by machines in contrast to natural intelligence displayed by humans. Nowadays, Artificial Intelligence is playing a major role in the financial service industries and taking it into higher peak. It helps companies in financial industry to save time, reduce costs and add value through the usage of algorithms that generate insights, acting as filtering key information which makes human work more effective and easy from wide variety of sources. It also helps in managing the trading decisions by processing the data and creating algorithms to manage trade better. It is useful to bank sectors as well, that helps in serving the customers efficiently by predicting and reducing the risk quickly. It also detects fraud or false information provided in data that humans might miss and reduces false declines. Artificial Intelligence has countless applications in financial service ecosystem that are prepared to transform the industry in the next several years including detecting and analysing brand sentiments, providing investment insights, making banking more efficient and less risky and identifying fraud etc. This paper is an attempt to analyse the Impact of Artificial Intelligence on Financial Services. It is purely based on secondary source i.e. obtained from blogs, journals, magazines, newspapers etc.

Keywords: Detects Fraud, Less Risky, Machine Intelligence, Intelligent Agent, Filters Information, Analyses Brand Sentiments, Artificial Intelligence Algorithms.

Introduction

Artificial Intelligence was first introduced in 1956 where many scientists from variety of fields like mathematics, psychology, engineering, economics, politics etc. came up with new creativity of intelligence i.e., artificial brain which is sometimes called as machine intelligence. It is a type of artificial intelligence where a machine uses to demonstrate any task given in financial institutions accurately compared to natural intelligence of human. Artificial Intelligence reduces the stress of a common man and also enhances the activities of companies efficiently by using various sources like algorithms, detecting frauds, security, good customer service etc. which helps people to keep their good financial stability. Artificial Intelligence techniques usually help in solving the challenging problems of financial companies. Many financial companies data will be structured or unstructured taken from different source of different quality will also influence the artificial intelligence in many ways

which should address unique task performance. The future of finance will be heavily influenced by financial companies like Financial Technology (FinTech) to increase the level of competition for generating revenue by using maximum resources, algorithms and many others in various fields like trading, investing, banking, lending etc.

Objectives

- To know the role of Artificial Intelligence in financial service.
- To analyse the present and future applications of Artificial Intelligence in financial service.
- To know the challenges of Artificial Intelligence in financial service.

Research Methodology

This paper is empirical in nature and it is purely based on secondary source i.e., obtained from newspapers, blogs, magazines, journals which reports that it is based on actual observations.

Review of Literature

- Paul Dravis- 'Artificial Intelligence in Finance' The Road Ahead, Harward Business Review, and artificial intelligence reshapes the work of human effectively in financial structure.
- Kul Bhushan- Artificial Intelligence in Banking: Challenges and Opportunities, technology cannot be implemented without challenges and opportunities, Artificial Intelligence in India especially in banking is not going to be considered without challenges which is beyond chat-bots.
- Ryoji Kashiwagi- Utilisation of Artificial Intelligence in Finance, financial Information Technology marketing department, wake of technological innovation known as deep learning in Artificial Intelligence is being utilised in various forms more actively as open innovation.

What is the Role of Artificial Intelligence in Financial Service Sector?

Artificial intelligence plays a major role in financial sectors and enhances financial companies workforce effectively from algorithmic trading to fraud detection which helps in saving time, minimising risks, earning money and also minimises the risk of human's accuracy.

Enhancing Customer Engagement: Once, financial service industry didn't pay attention to the quality of personalised communications and Artificial Intelligence technologies made this possible by developing its knowledge. Nowadays, in Artificial Intelligence there are algorithms based portfolio and natural language processes that help financial advisors to provide accurate guidelines to the customers or investors based on their financial queries.

Accelerating Fraud Detection and Minimizing Risk: Financial companies from many years are dependent on Artificial Intelligence in detecting frauds or false information that reduces the risk of companies effectively and starts growing up. Many companies such as 'MasterCard13', 'ThetaRay' offer a platform to detect frauds such as lending frauds in their financial institutions.

Maximise Resources: In Artificial Intelligence, by the usage of maximum resources like algorithms generating insights, enhancing customer service and predicting company's activities like sales will help many companies in financial industry in saving time and money.

Unlocking the Value of Algorithms: It is software containing automated tasks like matching data records, making elimination and calculations in financial sectors. Artificial Intelligence is built to learn and improve so that, companies can access to the large data sets to unlock the value of Artificial Intelligence algorithms. There are three types of data that Artificial Intelligence handles

i.e.,

- Parameters and Numbers that generate insights.
- Analyzing, Interpreting and Writing Text using natural language which is processing with Artificial Intelligence.
- Images that detect patterns, activity, object recognition, etc. which can be done only by using learning methods of Artificial Intelligence.

Trading: Better Trading through Algorithms: Many financial or investment firms have adopted algorithms for trading through sentiments or insights from social media, news or any other sources of data. It usually helps in managing trading rules and decisions through algorithms, customer service, and sentiment analysis and so on.

Filtering Information and Analysing Sentiments: Artificial Intelligence filters information received from wide variety of sources and provides useful data that help companies to improve their efficiency in workplace. For example, Reuters News Tracer, filters key information through artificial intelligence algorithms i.e., artificial intelligence filters only those important data which is useful before reporting it. Similarly, financial service companies detect sentiment from social media that provides useful advice with the help of artificial intelligence.

Banking: Artificial Intelligence enhances Efficiency, offers Data Insights, and Manage Risks: Artificial Intelligence enhances companies efficiency through chatbots that provides customer service efficiently and solves queries, listens to customers call, and provides accurate advice. Many financial firms contains unstructured database which stores information separately in entities where financial firms takes complete advantage of artificial intelligence to manage risks and work effectively.

Image Recognition in Financial Technology: Recent developments in machine learning have increased image recognition accuracy level that exceeds human capacity where 'Confirm. io' automatically identifies the data of consumer identity, and 'Onfido's platform' provides large database that is related to public which may include the verification of employee's identity or background data of criminal records.

Artificial Intelligence in Finance- Present and Future Applications

Today machine learning has come to play an integral role in many phases of the financial ecosystems from approving loans to managing assets. Yet few technically, some professionals have an accurate view of just how many ways machine learning finds its way into their daily financial lives.

Machine Learning in Finance- Current Applications

Below are some examples used wisely today in machine learning. These applications are applied currently in finance that generates good financial stability.

Portfolio Management: In artificial intelligence system, robo-advisors are the algorithms built to standardize financial portfolio. The advisors guide investors in investing on various financial investment fields. It is earning money by investing in various assets based on different investments.

Algorithmic Trading: It is a process programmed in computers to follow set of instructions for placing a trade in order to generate profits faster which is impossible for human traders. It is also known as automated trading system which uses complex artificial intelligence system to make faster trading decisions.

Fraud Detection: In machine learning, nowadays there are new tactics applied in detecting fraud through learning actively in identifying threats that take place in investments, lending or security in finance which human's might miss. It also minimises the risk of misleading information of a firm.

Machine Learning in Finance- Future Applications

The applications applied above are actively taken place today and also some are established for considering in future. Below are some applications applied in future,

Customer Service: Chatbots are the main source in customer service which is an artificial intelligence that conducts conversation. Nowadays, companies like 'Kasisto' are adopting chatbots to solve the common queries of customers in financial issues. These are built in natural language processing engine that interacts with customers especially in finance.

Security: Applications which are currently developed and used in frauds in financial or banking field needs to be secured and usernames, passwords or any security questions doesn't influence on user's security much where in future, securities might be advance that contain facial recognition or voice recognition or other data for safety.

Sentiment/News Analysis: It is supposed to be applied in future applications of artificial intelligence that extracts subjective information from social media, news trends or any other data source to identify the unstructured data i.e., trying to understand the price fluctuations or customers requirements in business intelligence.

Relevant Companies that comes under Artificial Intelligence Financial Service

Below is the shortlist of organizations come under these application areas,

- Portfolio Management- Betterment, Schwab Intelligent Portfolios
- Algorithmic Trading- Renaissance Technologies, Walnut Algorithms
- Fraud Detection- Kount, APEX Analytix
- Customer Service- Kasisto
- Security- FaceFirst, Cognitec
- Sentiment/News Analysis- Hearsay Social

Challenges of Artificial Intelligence in Financial Services

In financial institutions, artificial intelligence tends to create secure decisions for providing benefits to the banks applied in financial field. As in artificial intelligence decisions and initiatives takes place challenges also overcomes.

Understanding Artificial Intelligence and its Implications: For any financial firms, understanding artificial intelligence is the biggest challenge before implementing it. Artificial intelligence in financial firms plays a very important role and the benefits that occur from artificial intelligence should be knowledgeable for financial firms.

Data Quality: Every financial institution knows that data is important for success and many critical situations arise as challenge in firms through data quality issues. As the level of data grows as per time and effort applied for collection of data then the quality of data should also be standardized which is based on intelligent algorithm.

Narrow Focus: Intelligent algorithms are good at solving specific problems but they are poor in emotional intelligence and don't contextualise the information in which human's can only handle. An intelligent algorithm is trained to detect only specific payments in trade and not their specific activities which sometimes create barriers in banks or finance.

Responsibility: In the usage of artificial intelligence, challenges would be faced in terms of any responsibility taken place and especially in those cases when anything goes wrong during the process who shall take its responsibility. A financial institution foresees the activities of machine under the supervision of human and tries to allocate it accurately.

Suggestions

- The first step is to identify the problem clearly whether it exists or not before finding its solution so that the conflicts could not arise in the future for employment i.e., securing in advance.
- One should be aware of the functions of machine intelligence and need to explain each and every process or plans that take place in artificial intelligence before applying it in financial society.
- Artificial Intelligence should be more focused in communication and other developments for the sake of financial service according to the regulations applied on it strictly for providing data.

Conclusions

Artificial Intelligence in financial service industry has been changing and about 10% of organisations started to adopt artificial intelligence to compete and identify opportunities that human's might miss. Artificial Intelligence is very less in percentage for organisations but by gaining knowledge related to its benefits many companies start to adopt and work on it. It is a source which helps in company's progress and it provides value to the artificial intelligence responsibilities for applying it into future technologies.

The creation of Artificial Intelligence is huge in cost and also doesn't contain any emotions but it helps in reducing the error in the data and also helps in making corrections as many as possible repetitively. It doesn't take any break unlike humans while processing data and also contributes its artificial brain completely in various fields like medical, social, political and financial.

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AI in Marketing in Reference of Indian Market: Artificial Intelligence and Its Application in Marketing

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Abstract

Human race has evolved considerably from ancient Mesopotamian civilization to present modern era. The changes have been revolutionary and have deeply impacted our socio and economic life. The metamorphosis of human life has been fuelled by radical changes in technology to aid the process. Today we are the verge of another technological revolution which in long run will change the whole socio-economic fabric of our system. Artificial Intelligence (AI) works on the pattern of human brain and its learning and decision-making skills are much more accurate than human beings. Organizations across the globe have realized that AI can help them to identify their target market and offer better satisfaction at reduced cost. Since the whole operation of AI based on algorithm, data mining is an integrated part of whole process. With intermittent fluctuation in consumer expectations and the rising cost of communicating and acquisition of the customer more and more companies are exploring alternate route to reach out to customer and AI offers them a one stop solution for all their requirements.Though the privacy and ethical issue is still debatable, the digitalization of marketing activities has boosted its growth. This paper attempts to explore the usage of AI by in marketing activities and its future applications.

Keywords: Artificial Intelligence, Technology, Algorithm, Consumers, Data mining, Digitalization

Introduction

Marketing is the lifeline of any business activity. The whole crux of marketing lies in reaching out to the potential customer and full fill his needs. Now this sounds simple but actually it is very complicated and costly process with no guarantee of any fixed returns.Organizations consistently try to explore new routes to excite the consumers in a cost-effective manner. Though Communication process has witnessed rapid changes with advent of technology still it lacks the accuracy and ROI is haphazard. The internet boom in India has opened various avenues for doing business and has propelled the country to become the largest hub for Start-ups. Al most 90%

of the start-ups are technology-based enterprises with average age of founder below 30yrs. With meticulous planning and algorithm-based database they were able to invoke the interest of global venture Capitalist who pumped millions of dollars in them. The internet boom has change the dynamics of doing business and the percent share of digital marketing has been increasing rapidly in organizations' budget. More and more companies are becoming data centric as they are finding it easier and more responsive to reach the customer through online media. Even the consumer are becoming more receptive towards digital communication channel as they are spending more time browsing net rather than watching tv or reading newspapers. With concept of smart homes gaining popularity the consumer dependence of Tech based products is increasing day by day. Amazon Alexa or Apple Siri are providing hand on experience to the consumers of how Artificial Intelligence can assist in managing our daily tasks. Though it is still in nascent stage as the competition intensifies more and more firms shall shift from traditional to AI based approach and the companies shall be forced to migrate from generic solutions. Since AI can have long term consequences on profitability firms needs to increasingly consider the consequences of rating lower in customer interaction and satisfaction index by not adopting the modern approach.

Due to significant growth in online retailing and competition, business organisations need to migrate away from traditional solutions to modern solutions. Same is the case of service marketing, quality of service not only the single criteria to evaluate, it also include the quality of experience of customer related to service. Studies states that inclusion of new technology will help in personalising and enhancing the satisfaction level of the customers.

If we look back at history, there is no denial that people are emotional dependent on technology. It result into increase in the use of digital technology, comfort level between user and technology. This optimistic relationship can be used to enhance customer experience.

The introduction of new algorithms, fast processing cloud based data is making it possible for all the business organization to experiment with artificial intelligence. In the context of sales and marketing operations it is very early days in the domain of artificial intelligence. Marketing and sales operations mostly use artificial intelligence on advertisement and media. Many research is done on applicability of artificial intelligence in sales and marketing and it is found that most of the present experiment is happening in the field of programmatic advertisement, marketing automation, increase customer service. Artificial intelligence is also used in email marketing, lead generation, sales forecasting, cross selling etc.

Artificial intelligence and modern marketing: Marketing operations are utilizing artificial intelligence platforms in various ways.

Marketing Intelligence: Artificial intelligence helps in excelling at clustering and processing massive volume of data from different sources, which include data management platform, data warehouse and other sources. Input of data can be collected from various sources and relationship can be build and make predictions, which is impossible without technology. Marketers also use artificial intelligence for business intelligence, marketing research and accurate forecasting.

Generating lead and acquisition of customer: Artificial intelligence solutions are also capable of generating lead, which helps in acquisition of more customer.

Market optimization: Artificial intelligence applications can be utilize for media buying, content designing. Applications include advertisement programming and marketing campaign optimization and analysis.

Customer experience Management: Among artificial intelligence technologies like call centers, bots and virtual digital assistant, smarter search interface and recommender system, which is significantly contributing in excelling customer support.

Creation of content: Many industries using artificial intelligence driven platform to creat content, on demand advertisement. Promotional material, websites and other publish content. It include automated writing and image and video creation for specific target audience.

Practices for Implementation of Artificial Intelligence: Modern technology has significant impact on productivity of a business organization. The only question is how best technology is implemented. Following are the few principle to be considered for effective implementation.

Training and feedback: It is very important to have trust to create a collaborative environment between the marketers. Relevant training is essential to build trust and create an environment which is driven by technology.

Monitor each employee's interaction and use of modern technologies: Every employee has different engagement level with regard to technology. Organization need to observe and encourage usage of new technology by minimizing misuse and human errors.

Select the right machine learning tool that maximize productivity: Selection of right technology, which can enhanced productivity for the business organization, plays a pivotal role in the success of business process. Technology should be risk free and user friendly for the marketer, which will encourage the market to think aggressively about the usage of technology in their marketing process.

Work with vendors to set up control and prevent malfunction:Transparency is a virtue that significantly contribute towards building trustand avoiding errors. Any error can harm the brand reputation and decrease revenue generation. It necessitate a sound control mechanism to be in place to prevent any malfunction.

Artificial Intelligence Practices at India's Top e-Commerce Firms

Internet penetration has increase significantly in the last decade. According to Boston Consulting Group, internet users increase up to 550 million in 2018 from 190 million in June 2014. India became the second largest smartphone users in the world after US. All the E-commerce companies in India is feeling the heat of competition. Most of the companies injecting artificial intelligence platforms to create good quality product, smarter logistics, and target right demographics.

Flipkart: In 2018, flipkart joined hand with Microsoft to provideimprove service to digital shopping service. The main idea behind this is to deliver innovative merchandise, advertisement, marketing and customer service.

Project MIRA: It is a digital initiative by flipkart to engage customers before they make purchase decision, to prevent the rate of returns by asking few simple question in artificial intelligence platforms.

Amazon India: The Company has already injected USD 2 billion in India. Company believed that artificial intelligence helps in smart e-commerce, enhanced operation efficiency and help in meeting customer expectation. Amazon India has used artificial intelligence technologies in various areas:

Correcting address: Due to the unstructured nature of postal address issues like failed deliveries, missing delivery date, and delayed delivery are found very frequently. Artificial intelligence technologies helps in detecting false address, correcting city pin code mismatches and provide suggestion to users to correct address.

Catalog quality: Amazon India is using machine learning technology to reduce the defect in Catalog like brand, colour, and image quality.

Myntra: The Company is mainly implementing artificial intelligence in three aspect product, experience and logistics.

Product:Myntra is using an artificial intelligence platform called as "RAPID" to identify current fashion trends. It is done with the help of sales analysis. Another technology called Generative Adversarial Networks (GANs), which helps in creating similar but not same product. Earlier this year Myntra has launch a T-shirt design which is fully design by machine.

Experience: According to Institute of Business in Global Context, online payment transaction mostly failed due to digital incompetency and poor IT infrastructure. By using best payment gateways payment needs can be met. On the other hand Mynra is applying artificial intelligence on making recommendation to customers by analysing purchase behaviour of the customers.

Logistics: One of the biggest concern of Myntra related to logistics is return system. A platform called "SABRE" is used in Myntra to detect the Genuine returns, based on past purchase behaviour of the customer. It is very useful to resolve the problems of return.

The Relationship between Marketing and Artificial Intelligence: If we look back at past, business organisations hesitant to incorporate artificial intelligence into their strategies. Things have changed confidence level among marketers for artificial intelligence application has significantly increase. The main reason for this is the optimistic result towards business process efficiency. Digital marketing is an area where the presence of artificial intelligence is felt strongly. Some of the key areas where technology can boost digital marketing in 2018.

Personalizing user experience to a greater extent: It can be done with the help of clustering big customer data and then identifying individual behaviour and interest. Chat box is another platform that can enhance user experience. It is programmed to provide a platform for the customers to interact with business organisations.

Make Your Decision Simpler & Easier With Predictive Marketing: Each time a user browses on the internet; new information is generated and picked up for AI analysis. This information will reveal data like user wants, behaviours, and future actions. Supported this data, promoting is optimized to produce the foremost relevant data. Social media reaching conjointly reveals personal data regarding the prospect creating it straightforward for marketers to make a targeted campaign.

This additional reduces the sales-cycle because the relevant data is bimanual over to customers on a silver plate. This "predictive" campaigns will considerably cut back client analysis on the merchandise and makes deciding easier. As for marketers, they will still analyse the buyer| through information and even build the customer return!

This type of AI-enabled algorithms can challenge the present 'hotshots' like SEO during a large means. With AI powering the digital promoting initiatives from ground level, possibilities of trends like SEO, banner ads turning into obsolete square measure high. After all, United Nations agency wants SEO and web site traffic after you have an in depth report of your prospect?

Using image recognition to get maximum ROI: Previously, image recognition was confined to characteristic isolated objects in a picture. However with AI – enabled package, it's currently potential to induce a close description of a picture. Amazon's latest production Amazon Recognition will truly acknowledge human faces, emotions concerned and determine objects.This technology may be utilized in varied ways that for varied sectors. For banking and monetary sector, AI-enabled image recognition may be leveraged for quicker payment processes and enhance client security. Social media may be a large supply of pictures.

Social media has continually been biased towards visual content as tweets with pictures receive a hundred and fifty additional tweets and Facebook posts with pictures receive two.3X times additional engagement. The planet population along shares three.25 billion photos every day per this analysis. This large quantity of pictures may be leveraged by AI to grasp shopper patterns, behaviors, and needs. AI package can seek for pictures in social media and compare it to an oversized image library to draw conclusions.

For example, a snack manufacturer will map their complete against the massive assortment of photos in social media and perceive the client demographics reminiscent of cohort, gender etc., and conjointly geographical potentials reminiscent of if the snack was consumed additional at the beach, park, supermarkets, theaters so on. This can facilitate to align the promoting ways so as to extract most come back on Investment.

Conclusion

Thanks to social media stretch and massive knowledge, we tend to currently apprehend customers higher than we tend to ever did. Computer science and its associated technologies ought to bring marketers and customers nearer within the returning years. Customers have a stronger understanding of a product and marketers have a stronger understanding of shoppers. With computer science because the connecting link between them, it'd be fascinating to envision however digital promoting seems in 2018. Optimized higher cognitive process, higher sales-cycle and 'predictive' shopping for and commerce processes are sure-shot outcomes of this robotic war. However this point each customers and makes would air the winning facet.So let's wait and see however marketers are maneuvering this extremely fatal weapon to multiply sales, strengthening the pipeline and to urge real near to the shoppers.

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An Emerging Tech Innovation in Indian Banking with Artificial Intelligence Application: Challenges and Opportunities

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Abstract

Demis Hassabis CEO of google DeepMind calls AI as 'the science of making machines smart'.

Artificial Intelligence in banking and other financial sectors is showing signs of interest and adoption. AI will enable financial services companies to completely redefine how they work, create innovative products and services and transform customer experiences.

AI is set to have a truly positive impact on people by removing monotonous repetitive task from day to day work. A bank can expect potential savings of between 20 to 25 percent across IT operations including infrastructure, maintenance and development cost.

A digital boom is certainly taking place across all segments of banking thus making the operations more hassle free and impactful, creating a leaner system to work on but certainly with challenges.

These are some of the areas of AI applications in banking sector:

Block chain, digital payments, IOT, AI, Machine learning, BOTs, robotic process automation, smart wallets, underwriting

This paper highlights the importance of technology, challenges, opportunities and new innovations in Indian banking sector with the use artificial intelligence.

Keywords: Innovation, AI application, future of AI in Indian banking, banking sector, digitalization, technology, challenges.

Machine Learning has just turned into another innovation. It has become a part of our day to day lines. Banking sector has long approached fresh information and data utilizing that information to accomplish productivity and provide better administration.

Change does not damage people it pushes people to improve and settle for choices that are brilliant. Technology continues to drive the organizational change agenda, but now its making operations smarter and autonomous. There is a primarily shift from humans consuming data to machines consuming data.

Banking Sector is becoming one of the first adopter of AI, banks are exploring and implementing the technology in various way that's why.

Artificial Intelligence in banking especially in India should consider technology.

According to the recent report of 2018 is 83% of Indian Banking Bankers believe that AI will work along with the humans in the next two years with a higher than global average of 79%.
93% of Indian banks said they are using data to drive critical and automated decision making. Indian Banks including SBI have started deploying AI in a big way to improve efficiency, detect human behavior and reduce operational cost.

SBI the India's Largest lender has SBI intelligent assistant (SIA). A smart chart assistant evolved from the cutting edge technology of AI that resolves queries of NRI customers similarly to the GA bank representative. The Indian banking sector is on a rapid digital journey.

AI Application in Indian Banking Sector

1) **SBI Code for bank**
   A national hackathon for developers, start ups and students to come up with innovative ideas and solution for the banking sector, focusing on technologies such as predictive analytics, fintech/ blockchair, digital payments, IOT, AI, Machine learning, BOTS, Robotics process automation.
2) Axis bank: Innovation lab "Thought factory" and AI & NLP (Natural language processing).
   Thought Factory - In house innovation team and accelerator program through which the bank engages with start ups in 3 month programs. For fine tuning, validation and scatting their business.
   AI & NLP – an app to help customers with financial and non financial transactions.
3) HDFC bank - Eva [AI BASED CHAT BOT]
   Eva can assimilate knowledge from thousands of sources and provide simple answers in less than 0.4 seconds. Within the first few days of its launch, Eva has answered more than 1,00,000 queries from thousands of customers from IT countries across the globe.

ICICI Bank - Robotic Software

A Kind of software generally focused on automating office work. Software robots which emulate human actions to automate and perform repetitive high-volume and time-consuming business task.

Through machine learning AI can effortlessly consume and process large amounts of data at an expedited level.

Its immense speed brings efficiency to financial services and as it continues to learn and become even more efficient it can identify more patterns than before, providing scope for customized offerings to customers .

Banks assist customers to hedge their risks and furnish them with financial advice .Banks also process millions of cashless payments everyday –error-free and very inexpensively. A modern economy cannot survive without an efficient and safe circulation of money.

Opportunities

AI applications is banking to look out for in next 5 years

1. AML Pattern detection
   Anti Money Laundering refers to set of procedures, laws or regulations designed to stop the practice of generating income through illegal actions.
2. Chat bots
   Chat bots are artificial intelligence based automated chat system, which stimulate human chats without any human interventions
   They work by identifying the context and emotions in text chat by the human end user and respond to them with most appropriate reply.
3. Algorithmic trading
   Plenty of hedge funds across the globe are using high end systems to deploy AI models which learn by taking input fr9om several sources of variation in financial markets to make investment decision.
4. Fraud detection
   It is one of the key areas in banking sector where AI systems excelled the most.
   An early example of successful implementation of data analysis techniques in the banking industry is the FICO Falcon fraud assessment system.
5. Customer Recommendations
   Recommendations engines are a key contribution of AI in baking sectors. it is based on using the data from past about users and various offerings from bank like credit card plans, investment strategies, funds etc,.

Challenges

AI has helped to push the envelope in terms of technological advancements in the financial industry. For example, consumers can use financial recognition to login to financial apps and use voice commands to check their balances. AI is said to disrupt the industry even further. Financial institutions must repeatedly test AI platforms rather than merely looking at slides or sales pictures.

- Availability of right data
  Data is the lifeblood of AI and any vulnerability arising from in verified information is a serious concern for business
- Different languages in India
  Applications which use speech to txt or text to speech rely on natural language processing libraries and techniques but in order to effectively reach out to wider population in India much more progress is required on NLP font.
- Data Privacy
  Data access data privacy is a central aspect of any AI works bank do. India has their own data regulations. Banks in India will have to build Ai systems with GDPR (General Data Protection Regulations) and simulates regulations in mind.
- Scarcity of trained Human Resources
  The existing workforce is not familiar with latest tools and applicatio9ns. It is one of the important challenges hat is faced by industry and not just banks in India

Conclusion

The union finance minister in his budget speech for FI 2016-2017, announced several measures to support consolidation of public sector banks. An allocation of Rs 25,000 Crore was made for FY 2016-2017 towards recapitalization of public sector banks, which could be increased if required.

Leading upto 2020, radically transformed Banks models will emerge. A glimpse ahead shows an emphasis on innovative technologies to vastly facilitate banking – inclusive banking through new types of bank models, non – traditional alliances to make banking affordable, Fintech capabilities to make banking customer centric. Banking in the future will be collaborative, exciting and will raise the bar in setting new standards.

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Abstract

Today without artificial intelligence no industries and other service firms can do nothing. It has become an indispensable part perhaps, another factor of production. India have great accessibility for young scientists, engineers, doctors, professionalists etc. Fewer are dedicated towards AI research field and innovation. This have resulted inadequate expertise in AI field and thus block India moreover backward in terms of AI innovation. In spite of this, banking sector gaining much importance towards AI adoption. Recently our NDA government initiated national programme or policy on AI in India. Adoption of AI really boosts Indian economy and however leads the world. Presently, India requires another revolution called AI revolution to upgrade its technological innovations and compete in the world market. This research paper stress more on AI and its innovation, development, improvisation in India. India is still backward in AI innovation due to many issues. It is craving for improvement in technological infrastructure in terms of AI adoption so as to meet the speed of China and U.S. Finally, this paper analyzes the future of India in terms of AI that it can really succeed or not.

Keywords; artificial intelligence, India, accessibility, adequate expertise, NDA government, revolution, improvisation.

Introduction

Artificial intelligence is an intelligence which is demonstrated by the machines. It countershuman and animal cognitive functions. The main cause for the emergence of artificial intelligence is that technology advancement and our apparent dependence on it. Growth or development movesparallel to AI adoption as well as advancement in any economy. It was started in early eighties but became full-fledged during 90s and 2000 commercially. The main intention behind AI adoption is to solve problems like learning, recognition of speech, planning, knowledge etc. Artificial intelligence includes computer science, mathematics, linguistics, psychology, neuroscience, philosophy etc.Present artificial intelligence has gone up to the extent of automation in all fields like transportation, health, somewhere in education sector and also in military. Today artificial intelligence has become indispensablepart of technology industry.

AI and INDIA

India is the land for different languages, different culture and for different masses. Therefore, there is diversity for scripts, dialects and for dress culture. Thus, for AI it is very challenge in India because

of these diversities and becomes very resilient. What W.W. Rostow had advocated in his growth doctrine, is that; five stages for economic growth. Each economy has to go through these five stages that is from traditional society, pre-condition for take-off, take-off, drive to maturity and to age of high mass consumption. It is known fact that all developed economies have already reached the stage of age of high mass consumption, but India is yet to reach in fact it has reached the stage of drive to maturity, which means, there are certain changes taken place in some sectors like for example; unskilled to skilled labor, changes in entrepreneurial activities, industrialization along with new strategy for R&D. Presently, India require a new revolution to attain the stage of high mass of consumption. Henceforth, there is a requirement for new strategy, new innovation, new type of training for skilled workforce perhaps new class to reach the last stage which indicates to be technologically strong and lead other developed economies. Perhaps, India is craving for that type of resolution.

India is striving hard to catch up the speed of China and U.S in terms of AI innovation and implication in field study. It can be said that India needs another revolution. Before it had industrial revolution and made great impact on economic growth and development but now it requires attention of AI and AI revolution, that is to transformation from industrialization to robotization or digitization. When it comes to attention towards AI implication and innovation, India's attention towards it is less compared to China and US.

China and U.S. are far ahead in adoption of AI technology and also on innovation. China often recognized as land of robotics, in fact, for robotics and other AI innovation China and U.S. is the birth place. This is because of high investment on AI. These two economies, roughly say about 15-20% contributes from GDP. WhereasIndia it contributes only 0.002-0.005% of its GDP towards AI. For India majority of its GDP is from service sector like BPO companies. Following table reveals the concentration of two developing countries like India and China on research and development (AI).

Particulars	China	India
Absolute R&D	409.2	50.3
Number of researchers	3926	546

Source; UBS research.

This table information is based on recent research handled by UBS, clearly shows low concentration level ofAI in India compared to China. India being one of the top country in terms of producing end number of engineers, doctors and etc. There is uncountable institution, private engineering colleges, but the fact is only few would choose research and innovation, remaining would opt for IT. Today in India there are more of start-ups company and at the same time due to industrialization and urbanization many MNCs companies have set up in industrial cities like Bangalore and Hyderabad and so on. There are handful of AI companies in India along with lack of technology infrastructure.

All experts thank federal government for its initiative to explore AI innovation and implication in India. On February 2018 NITI Aayog came up with NATIONAL PROGRAMME ON AI on order to have digitization. The profounder are Narendra Modi, Prime Minister and Arun Jatlee, a center finance minister. This bought festival mood for private sector, technology firm to boost their performance by adopting AI. Prior to NITI Aayog, many technology firms have already adopted AI into their business as mainstream in order to compete with global market. The recommendation of AI by NITI Aayog is to boost six sectors. They are, health care, agriculture, education, finance

sector, smart cities and infrastructure, and smart mobility and transportation. If this succeeds, its off sure that India's GDP would increase to $6 trillion by 2027. This AI implication programme on different sectors includes robotics, autonomous trucks, advanced financial technology and such.

Opportunities or Strenghth for AI in India

India, on one hand aiming for better future in terms technology and on the other hand it is increasing productivity in all the sectors through investment process. Some sectors may be exempted like for example agricultural sector. Perhaps it is doing good nowadays with digitalization policy. India on every academic schedule produce large number of engineers, doctors, IT students etc. Around 2020 or 2025 India may called as young country with youth bulge. AI innovation and companies may offer god jobs for this young masses. There is no threat for employment opportunity in India because, today, majority of the industries, firm, enterprise is indulged in AI technics. In private education institution they started adding AI technical course along with major subjects so to young generation can imbibe certain skill regarding research and development. Certainly yes that BPO stay as back office for India's data collection, analyzation and such process. It is statically proved that BPO and IT firms contributes more to India's GDP today. They might find opportunity in data cleaning, classification and tagging. Increase in human population (mobile subscribers) along with skill development may be plus point for development of AI in India. Industrial cities like Bengaluru and Hyderabad are found to be most favor to IT firms due to number of industries, trading and investment funding. Compare to previous statics data, today India's literacy rate is high. This shows that India has educated population and it would be easy to train them. Work force are very elegant and comprehensive about know-how of technology.

Risks

There are many discussion and debate going on that AI would still job. With reference to India, as major contribution to its GDP is from service sector like tech. firms it could adversely affect. In future,AIcan make IT service to be fully automated and there would be no chance for work force to be secured in job environment. Apparently, there are few companies who adopted AI. Until and unless AI becomes as a mainstream India cannot progress in this field. First of all, there is low level of funding from the government side. China and U.S. contributes around 20-30% of its GDP for AI innovation and research whereas India still remains in decimal. Funding is very small compared to these countries. It is said that every year India produce huge number of engineers, researcher, mathematicians, staticians and such. But the tragedy is only few is available as expertise, professionals and such. Where majority of them goes for IT. Therefore, there is adequate availability expertise, professionals in order to take up AI research and development. AI requires qualitated and quantitated data. In India there is improper data distribution. Government investment on technological infrastructure and on encouraging new comers can play major role in developing AI in India. The presence of lack of collaboration between different departments, lack of expertise as it is said, lack of creativity power in young masses as they fear for risk taking all these add to the problem for AI in India. India is the country of many languages and many cultures. This pose serious issues in terms of translation of language and some culture might accept or not. Lastly there should be AI fluency in order to have AI innovation and development. In developing nations like India, there is lack of technological fluency. Today India has 58% of industries, but only countable have adopted AI techniques.There is no awareness regarding AI. In developed countries they have already started AI in diploma and other engineering courses in order to bring AI awareness among young experts. Based on IP (intellectual property) index India has ranked 43 out of 45 countries (2017 global IP index). According to 2016 statistics, only 45000 patents

were signed in India whereas China in the same year went up to 1.1 million patents. All theseare obstacles to India in order to AI improvement and adoption.

Can India Really Suceed in AI?

There are huge number of engineers, researcher, mathematicians, statistician in India. But they are adequate. In some sector like banking sector AI adoption is doing good job. Moreover, it is inevitable for banking sector to have AI. Private banks have already installed robotics for better customer service and Ai techniques like chatsbot etc. When it comes to industrial and other IT firms, only few have adopted AI. It is glad and some experts are very much happy about the Indian government forming a policy regarding AI during budget summation. Firstly, India has to resolve all those obstacles for AI. For this it requires, upgradation, training, innovation, reskilling workforce, data quality and quantity, proper funding on research and development. It should change from pilot survey to mainstream survey. Widespread of network line or area can overcome some issues. Experts says that AI doesn't solve 90% of problem. It provides some solution to the extent. Therefore, manifestation of AI on core firms or sectors can overcome some issues. AI is like a new factor of production. It completely transforms every sector. Many experts advocate that, no country is doing with social sector. India can take up AI innovations on social sector. Proper investment, funding can make India to move ahead with AI. Lastly upgradation, new form of handling can bring or do wonders in AI field.

A country leads the world only when it leads to the AI innovation and research. Today it is AI world and because of its revolution many economies are developed and developing. India still backward in AI adoption but it is true that in future it will lead the world I all the terms.

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An Enquiry Concerning Artificial Intelligence through Social Networks

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Abstract

Despite problem-solving ability, the issues bothering artificial intelligence (AI) cause concern to the moral circuits. Questions such as what consequences machines make upon human nature and human nurture as social individuals in the community? What machines have become – servants or masters – in the face of upcoming civilization? AI supporters show optimism contrary to the non-supporters who question the credibility and safety of AI reality. The objective of the paper investigates the changes in the self and the social activities of users due to AI in the network society, Secondly, whether the AI technology modify moral standpoint of the people in the future. In synthesis, the way AI network resolves social problems of the society. The subject demands attention by gleaning the references for inquiry. The method of data collection drawn through the secondary sources by using meta-analysis technique from published journals from national and internal forums. AI represents knowledge, logic, and engineering by connecting pieces of facts to get a problem solved or a riddle answered in the real world as the proposition. The social network provides community and AI provide information to people. How by using AI the problems of the world resolved to protract debate and attention in the growth scenario, astutely.

Keywords: Artificial Intelligence, Social network, Machines, Network society, AI Ethics

Introduction

Behind every pattern of digital communication, not only human intelligence but also artificial intelligence operates. Ever since the term artificial intelligence coined in 1955, programmers code machines to work and respond to user's preference. AI builds users community for social cohesion as much as user's dependence on AI for the automation tasks. The impact of AI on the user's community increases rapidly and affects the nature and the nurture of user's application. The subject enquires influence of AI on user's social and individual activities in the social network media. After the industrialization, the services of technology grew horizontally and vertically expanding corporations and communities by shaping the culture of society, especially, the part played by AI on the users' network, not only, affect knowledge about the real social world, but also, influencing the millennial population. In other words, AI reflects the network structure on the basis of users' database. The AI devices connected through portals not only create communication along the line but also network patterns. The social network, as a

type of artificial intelligence, communicates the social reality in the digital world. The intelligence of machines demonstrates the morphology of users. Therefore, AI as a unique communication system becomes a symbol of the social network society as in smart cars, surveillance, detecting fraud, fake news, customer service, video games, predictive purchasing, smart recommendation, smart homes, virtual assistants, preventing heart attack, identifying criminals, preserving wildlife, search and rescue, cyber security, work automation and maintenance prediction, hiring and firing and so on.

Artificial intelligence discloses social networks and functions with the web of partnerships as in Amazon, Google, Facebook, IBM, Microsoft, Apple, LinkedIn etc. Although, the ways in which devices serve man determines the quality of technology, even so the feedback loop of devices form network structure and allow interactions among and between users possible. The connected user-devices not only link network nodes but also onset communication of users along the line. If interactive media operates using pattern, then, the structural interaction of people in the web vindicate pattern as well. Moreover, the type of mind operates behind social interactions indeed produces knowledge about real connections of the social world. Similarly, artificial intelligence as a manmade system resolves problems programmatically. To sum up, the interface of AI serves community to build and transform public interest. Nevertheless, as a device, AI thinks and acts rationally like human beings to solve problems in network community. As science fictionist Vernor Vinge says, "I am suggesting that we recognize that in network and interface research there is something as profound (and potential wild) as Artificial Intelligence."

Methodology

The paper argues AI as the digital framework for network society. In other words, the research investigates, how AI contribute to individual and social development of online community for users in network and ultimately to the individual and social construction of technological society. How technology bring changes through the means of AI with respect to the nature and nurture of individuals in society. In order to find out, research papers from journals and open sources written by field experts of secondary data sources were reviewed in the literature. Meta-analysis technique helped to review the sources from academic journals that analyze the findings of AI in digital society. "Artificial intelligence is here and being rapidly commercialized, with new applications being created not just for manufacturing but also for energy, healthcare, and oil and gas. This will change how we all do business", says Joe Kaeser. The paper examines the social and individual improvement of users in the network society through ethical AI network technology.

Review of Literature

Framework of AI on individual and social network

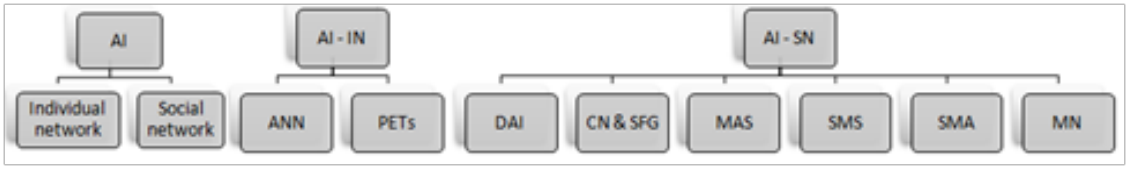

Figure 1 AI on Individual and Social Network Pattern in Digital Platform

Note: AI-IN (Artificial Intelligence-Individual Network), ANN (Artificial Neural Network), PETs (Privacy Enhancing Technologies, DAI (Distributed Artificial Intelligence), AI- SN (Artificial Intelligence – Social Network), CN&SFG (Complex Networks and Scale Free Graphs), MAS (Multi Agent System), SMS (Social Media Software), SMA (Social Media Analytics), MN (Markov Network).

Stephen Hawking evaluating human and artificial intelligence states, "everything that civilization has to offer is a product of human intelligence… AI may provide… eradication of war, disease, and poverty would be high on anyone's list. Success in creating AI would be the biggest event in human history (Hawking) ." In this section, selective literature reviewed on AI under individual and social networks in relation to actions of users.

AI expand individual's network (Nature): AI enhances nature of self, privacy, and influence of users. Artificial neural network, privacy enhancing technology (PETs), Ontograf of influential people may influence the nature of individuals in the network. AI-based privacy enhancing technologies ('PETs) such as differential privacy and federal learning plus AI auditors and guardians may enhance security of individuals in the AI community (Els). AI influences on economic policy in terms of employment, inequality, and competition explains AI on individual and social networks (Agrawal, Gans and Goldfarb). The Emotion machines (Minsky) mimes the future plans of AI investment in creating feeling and emotions to serve man's need. "Web mining in e-learning" provides with patterns for e-learner's behavior and environment by login paths (Lappas). Similar works extend AI network for perception of individual's nature of development.

AI expand social network (Nurture): The stories of web media support social inclusion arise out of social interaction. By using user-generated content and connecting intelligence, network science supplies knowledge about the social world. AI through network media shape users, corporations, and communities by impacting the millennial population.

AI functions as quality of technology in which devices mediate to serve people. For instance, distributed artificial intelligence stands as a platform to spread social knowledge and action. Complex networks and scale free graphs as a platform to spread social conventions.

Multi-agent system as a platform builds social trust and reputation to user's interest. Social media software contributes in designing social intelligence. Social media analytics predict social media market for brand building. The study examines how technology derives social structure? Rather than how social structure derives technology to existing structure patterns? (Burkhardt and Brass).

The study conducted by Schmälzle, et al (Schmälzle, O'Donnell and Garcia) explains, "Social exclusion is associated with increased connectivity within the mentalizing system." Distributed artificial intelligence as a platform to spread knowledge action; Grasser published on how knowledge and action spread using distributed artificial intelligence (DAI) through the open information systems semantics (Gasser).

The body of research that deals with intelligent communities that collaborate and coordinate knowledge-based processes contribute in social conception of knowledge and action to web community. Complex networks and scale free graphs as a platform to spread social conventions; Multi-agent system as a platform to explore users trust and reputation; Social media software designs contribute to social intelligence; Social media analytics predict market condition to build brands; Markov networks formulates complex real world scenario to study real social interactions.

Analysis of Review

AI versus Humans (morality): If the nature and nurture of users meet the parameters of following scale of ethics in producing AI network then such an action stands responsible one to the human community or else chances of deviation irresistible. AI actions within human network ethics framework derived from the normative ethics as in following table.

AI in Human Network Ethics

Moral Action Scale for Humans	AI extend individual's network (Nature)		AI extend social network (Nurture)	
Virtuous	yes	no	yes	no
Rights respected	yes	no	yes	no
Dutiful	yes	no	yes	no
Rationality	yes	no	yes	no
Unbiased	yes	no	yes	no
Valuable	yes	no	yes	no
Happiness for many	yes	no	yes	no
State welfare	yes	no	yes	no
Good for the self	yes	no	yes	no
Loving results	yes	no	yes	no
Promotes knowledge	yes	no	yes	no
Economic welfare	yes	no	yes	no
Overall preference & satisfaction	yes	no	yes	no
interrelationship and interdependence	yes	no	yes	no
Reform based outcome, virtue,& duty	yes	no	yes	no

Source: derived from (Normative ethics)

AI as problem solver (social problems): The impacts of AI leads to "growth acceleration, human wage fall, and non-human value shaping the future" opine few (Christiano). AI in social network contribute, the level of social integration associated to aspects of individual health (Seeman). "Positive impact of AI promotes "international friendship and goodwill", "articles cheaper", "reduced the toil and sweat of the laborer"; Negative consequences results in, "materialistic life, inhuman qualities", "disputes" "political hegemony", "unemployment" and so on. (Paulo)

The literature on AI in social integration highlights the following social benefits;

- Distributed artificial intelligence as a platform to spread social knowledge and action:
- Complex networks and scale free graphs as a platform to spread social conventions:
- Multi-agent system as a platform to explore users social trust and reputation:
- Social media software designs contribute to social intelligence:
- Social media analytics predict social market condition to build brands:

"We argue that networks operate at the behavioral level through four primary pathways: (1) provision of social support; (2) social influence; (3) on social engagement and attachment; and (4) access to resources and material goods." (Berkman, Glass and Brissette). Social network integrates people. A Study on elderly individuals provides understanding on how, "Poor social connections, infrequent participation in social activities, and social disengagement predict the risk of cognitive decline in elderly individuals" (Zunzunegui, Alvarado and Ser). The citations show uses of networked AI in communities. Therefore, AI cannot create the social problems in the networks unless ethics and morality sidelined or ignored in user faceoff situations.

Conclusion

"There is huge demand for artificial intelligence technologies";"Facebook can be an accumulation of different intelligences" says Yuri Milner venture capitalist and physicist. The human morality examines AI in individual and social networks. According to the human ethics, AI actions weighed, gauged, evaluated and so derived. In the future, AI cannot be without ethics. In the phase of super intelligence, AI network influences individual (Nature) and social (Nurture) spheres of user community. In spite of all the limitations, "I believe this artificial intelligence is going to be our partner. If we misuse it, it will be a risk. If we use it right, it can be our partner." Masayoshi Son. To sum, the enquiry of AI begins with network effect and ends with human morality show accountability of the technological inventions and innovations rather than mere delusion or AI apocalypse for upcoming ages of human civilization.

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Artificial Intelligence Versus Human Intelligence, Who Will Win?

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Abstract

Artificial Intelligence is referred to intelligence demonstrated by Machines. It is the area of computer science which stimulates intelligence in the machines and programme the machines to think and mimic the way a person acts and reacts. Artificial Intelligence today is known as Narrow or weak Artificial Intelligence and its outcome is quantum computing, SIRI the friendly voice activated computer Robotics, virtual personal assistance, video gaming smart car, predictions, fraud detections etc.

Artificial Intelligence from its narrow approach is rapidly progressing towards General or Strong Approach that is from self-driving cars to Machines playing chess and solving puzzles.

An important question now that arises is, what will happen if the Strong Artificial Intelligence Succeeds? Many researchers have expressed concern and fear over this issue .The same researchers believe that the Artificial Intelligence will help to build a strong future but will also lead Artificial intelligence toward s becoming potentially more stronger than their Creators that is more stronger than the Humans.

People now control the planet not because they are Strongest, fastest or Biggest but because we are Smartest. If we are no longer the smartest then we will remain under Control of the smart Machines.

Our Civilization will flourish as long as we win the race between Growing power of technology and the wisdom with which we manage it.

Keywords; Intelligentmachines, narrow approach, strong approach, creators, control and manage.

Introduction

The Dooms Day s Theory Says that "Artificial Intelligence and the Machines will one fine day destroy the Mankind."

Stephen Hawkings has also warned the world about the development of robots and the machines beyond a certain point that will end the Mankind.

Some experts have also expressed their thoughts over the development of Artificial Intelligence and its negative consequence in the near future of our World.

Similarly there are various Scientists, Innovators and Experts

in the field of Artificial Intelligence who are promoting the development of the Computers and Machines for the betterment of the Mankind towards Prosperous Future of our word and Stating the benefits of Artificial Intelligence in all the spheres of life and all the other sector including Business, Industries, Education, Health Care etc.

From the above it can be summarized that there are conflicting ideas about the concept of Artificial Intelligence and the conflict is because some experts give more weightage to Human Intelligence when compared to the Artificial Intelligence.

Objective

- To study both the types of intelligence,and express our idea on their differences and our personalized opinion on which is better and which is ultimately going to Win.

Conceptual Frame Work

Artificial Intelligence

It is related to creation of Intelligent Machines.These Machines have ability to create a never ending thought process that would help in solving all the problems.

By inventing revolutionary new Technologysuch super-intelligence might help in eradicating war, diseases and poverty.

Human Intelligence

It is related to natural intelligence among the humans. This intelligence has ability to adapt, and learn from all the situations which helps to solve allproblems and lead towards evolution of human brain.

An important question is what will happen if the quest for the strong Artificial Intelligence succeeds and what if Artificial Intelligence system becomes better and stronger?

To comment on "WHO WILL WIN''? We will have to compare both Artificial Intelligence and Human Intelligence.

Comparision of Artificial Intelligence and Human Intelligence

Features of Artificial Intelligence

1. As name suggests it is artificial in nature.
2. It is a stimulated intelligence in machines in the form of a program
3. It is result of revolutionary Invention.
4. It works on Digital Data.
5. It is of two types Narrow and General.
6. It has tremendous speed of execution.
7. It is less biased.
8. It has exceptional Operational Ability.
9. It is extremely accurate.
10. It has good Memory.
11. It works on hard ware and software.
12. It performs limited task.
13. It requires supervision and maintenance.
14. It is vulnerable to virus.
15. It does not take any responsibility.

The above mentioned features of Artificial Intelligence includes both the benefits as well as the limitations. we believe that today Artificial Intelligence will help us to better prepare and prevent potential negative consequences in the future thus enjoying the benefits while avoiding pitfalls. Artificial Intelligence has the potential to become more intelligent than their Creators and thus control the humans and the planet. All systems are as good as the data if we enter poor data the system can become racial, gender or ideological biased which may continue to be trained using bad data making it an ongoing problem.

It is here, the Human Intelligence will become important, and eliminate the errors caused due to the computers and machines.

Features of Human Intelligence.

1. It is natural as it is the result of the evolution of brain.
2. It is genetically inherited.
3. It increases with learning and experience.
4. It adapts and evolves with interpersonal contacts and communication.
5. It depends on the mental qualities.
6. It is capable of improvising on its own.
7. It has reasoning and problem solving capacity.
8. It has rational thinking and self-motivating ability.
9. It is creative in planning and execution.
10. It has self-awareness and manipulative skills.
11. It can manage different skills during life time.
12. It creates and dominates Artificial Intelligence.
13. It can identify and address various opportunities.
14. It can cope with situations.
15. It is of different types like Naturalist, Musical Linguisticetc.

All the limitations of the human beings apply as the limitations to the human intelligence. But all of which can be overcome. The Humans should bear in mind that the scale of problem in Artificial Intelligence can be exponential , our energy source and ability to observe the world is always finite and thus the result in terms of ordinary human experience are likely less impressive than they sound.

Findings

Technology is emerging day by day Scientists are more and more interested is making something innovative Artificial Intelligence and robots are being joined, computer and machines are created that are synonymous to both humans and animals by efforts employed together. The major aim of Artificial Intelligence is to add human qualities in robotics so that they become more human.

Our Civilization will definitely flourish as we remain the Smartest, Ethical and the most responsible. As the two sides of the same coin both the Artificial Intelligence and the Human Intelligence have both Strengths and Weakness.The qualities like having Moral values being Ethical, feeling bad, guilty, being scared and fear or God are always going to take us towards a brighter future. Yes we need help and support that can be obtained from Artificial Intelligence,TOO much of reliance and over-dependency on AI will definitely create problems that is where the Experts feel that AI will become more stronger than us and control us.Experience make each person different but that is not exactly how AI works, it works on its algorithms, different types of digital data, built in instructions designed by the Scientists, discarding Culture and preference.Seen at the macro level improvement

in AI would create a loss of identity where human intelligence experience of both driver and the customer is overridden by a machine. In simple words a human has been displaced by Artificial Intelligence. We may not accept it but this is in essence, a machine planning what is best for a human.

Conclusion

The humans are the creators of Artificial intelligence hence it is up to,them how to processed with the progression and the development of the Artificial Intelligence. Till date we have very intelligently utilized the efficiency, speed and accuracy of the Machines.

From mining to going to Mars Artificial intelligence has assisted us to discover new Frontiers. Artificial Intelligence is the beginning of a human Machine Partnership that should start off with coming together of many minds-sociologists, Scientists and engineers who must deliberate on the effect of Artificial on communities and individuals. The major aim in development of Artificial Intelligence should not be to add human qualities in robotics rather leave them as machines so that they do not become like humans and compete with them and thus avoiding devastating effects.SO the answer to the question Who Will WIN? Isdefinitely we 'Humans will win'. We will remain to be the Remote Control of the Machines and never be controlled by them.

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Traditional to Convenience Banking: Artificial Intelligence a Catalyst

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Abstract

Then the computers and now the artificial intelligence is the present day replacement to the human brains. Artificial Intelligence in contrast to the natural intelligence is going to rule the world in the near future. AI and artificial beings are no more seen as fiction characters. In almost all circumstances they mimic the human minds and provide possible solutions in almost all the dimensions of the business. A majority of the decision makers either completely depend on AI or partially at least for taking a decision and this clearly shows that AI is something invariable which humans rely on and is order of the day. The present world is heading towards a digital transformation like AI to harness the best possible solution to drive the business growths. AI has become the new oxygen in the world. AI has turned out to be a key to success in the emerging world. It`s been used by the people and especially the incumbents to grow, sustain and help multiply the business opportunity. No business is exempt from adopting AI and so the banking sector. Though AI is in it`s nascency, the banks are heading towards a revolutionary change from traditional banking to convenience banking. Banking services in India are deemed to be traditional yet are enthusiastic enough to embrace the AI technology for their daily operations. To keep up with the competition and in order to stand as an innovative company AI has become crucial tool in the banking sector. In this research paper, I have tried to shed some light on AI of banking sector in India, its needs & importance. The data has been accumulated from various sources which include books, journals, websites. The paper explains the overall scenario of AI in banking sector, the challenges faced by the banks in adopting AI and growing opportunities to the banks in adopting it.

Keywords: Artificial Intelligence, AI, Invariable, Oxygen, Nascency, Banking, Emerging World.

Introduction

First the humans, then the wave of digitalization struck the banking sector. Digital technologies like e-banking, mobile banking etc partially restricted clients to enter the banks for availing various banking services. The technology enabled services is becoming more accessible and the banks are investing billions in the technology in order to provide personalized services to its customers. Now it`s on AI which the banks have started investing on. The banking world is no stranger to AI and automation. The banks believe that the future

of banking will be dominated by AI. AI is among the trend in banking industry which is trying to reshape the industry. In this view many banks are in the verge of converting their branches from digital to AI branches. Some banks are extensively deploying AI to improve efficiency and dwindle the operational costs. The banks have been using AIs for both back office and also to handle customers on the trade floor.

Changing Banking Scenario

The smartphones were just the beginning, Moving further in time, the world noticed the need for innovation which led to the emergence of AIs. Banks use AIs in different levels of it`s operations to render different services to it`s customers.

The banks are using various AIs ranging from chat-bots which provides solutions to the client`s queries to the automated robots on the trade floor. However, the Chat-bots are not just being used for communication purpose but they have proved their expertise in fraud detection, fetching analytics, data capture and are implemented by the banks as self-service customer-facing tools.

Other AIs like automated robots are being implemented by the banks to decrease the human errors, fetch accurate data and enhance predictability. The implementation of robots has led to cut down the costs. Once an algorithm is trained to perform a set of operations, it can be replicated in countless locations and perform the same high standard works.

Research Objective

This paper aims at examining knowing various phases of Indian banking sector.

- To study how AI has affected the banking sector in India.
- To study the challenges faced by the banks by adopting AI in banking operations.

Research Methodology

To complete this research, the data has been collected from journals of various authors, magazines, websites and other resources in the form of secondary data.

AI: An Aid to Banking Sector

Technology, being most preferred aspect for both customers and banks in the world today.

AI is gradually transforming the banking sectors in many parts of the India. The AI have evolved the way people bank in India. Are AIs advantageous to Banks? Or to the society? Or both? Lets see the how AI has brought an evolution in banking sector.

Efficient Services at the Speed of Light- Though artificial intelligence can effortlessly consume and process large amounts of data at an extreme level, Its immense speed brings efficiency to financial services and as it continues to learn and become even more efficient, it can identify more patterns than before, providing scope for customised offerings to its customers. This has brought smiles on the face of the customer and has led to Increased customer satisfaction.

Combat fraud and improve compliance- AI has the ability to detect fraud by flagging unusual transactions. Subsequently, this builds trust as it creates a secure environment for customers, something which could be of major importance for a number of customers. Punjab National Bank in one of it`s press meet when asked about massive fraud involving Nirav Modi and Mehul Choksi told it is going to rely on AIs for reconciling the accounts which further helps in improving the audit systems as it needs to clean up the process.

Productivity Gains - AI can take up routine, repetitive processes and make them both more efficient and effective. AIs are best known to automate the cognitive works and helps to cut down on monotonous works thus reducing the human error and in turn leading to increased productivity.

Cost Reduction - The banks had to employ huge amount of human resources to answer the boredom questions of the customers, now due to the implementation of chat-bots and other such AIs has eliminated the human resources in solving the boredom queries of the customers. Implementation of AIs are going to bring an end to outsourcing

Reduction of Error- Artificial intelligence helps banks in reducing the error and the chance of reaching accuracy with a greater degree of precision.

Services 24/7- Machines, unlike humans do not require frequent breaks and refreshments. They are programmed for long hours and can continuously perform without getting bored or distracted or even tired.

Challenges of Implementing AI in Banking Sector

The challenges being faced due to implementation of AI is beyond ones imagination. A paradigm shift in India Banking Sector presents unique opportunities as well as challenges.

Lack Of Technical Education- though AIs are highly intelligent machines, people who use the AIs lack the technical knowledge which enables to use them. This subsequently leads to the failure of installing AIs at branches.

Failure of technology- Most of the time the technology driven banking face the problem of bugs and other severe performance issues.. In the case of severe breakdowns, the procedure to recover lost codes and re-instating the system might require huge time. The success of any technology lies in instant fixing and technology up gradation.

High Costs- Creation of artificial intelligence requires huge costs to set up as they are very complex machines. Not just installing them, the repair and maintenance require huge costs. They have software programs which needs frequent up gradation to cater to the needs of the changing environment and the need for the machines to be smarter by the day. The frequent machine checks, upgradation and other such maintenance works are performed by professionals who charge high fees which further makes the AIs a costly affair.

No Replicate To Humans- Artificial Intelligence is believed to be a gift to humans and nature. The AI machines do not have any emotions and moral values. They are meant to perform what is programmed by the professionals who designed them and cannot make the judgment of right or wrong and even cannot take decisions if they encounter a situation unfamiliar to them. They either perform incorrectly or breakdown in such situations. The sudden breakdowns cause lot of inconveniencies to the customers and banks as well.

Unemployment- Unemployment is a socially undesirable phenomenon. People with nothing to do can make use of their destructive creative minds to create a havoc. Not just unemployment, the creativity power of the people is killed by the extensive use of the AIs and thus making them lazy.

Review of Literature

- Antony, observed that in western countries banks are engaged dependent on technology vendors to help the commercial banks. The vendors have to undergo a diligent process while serving the bank. The author has reviewed the process by which the front office system is integrated to the point of sale. The banks are more concerned with security and the complaints by the customers. The process of signing the bank vendor to provide technology takes longer period of time.
- B. Janki (2002) analyzed that how technology is affecting the employees' productivity. There is no doubt, in India particularly public sector banks will need to use technology to improve operating efficiency and customer services. The focus on technology will increase like never before to add value to customer services, develop new products, strengthen risk management

etc. the study concludes that technology is the only tool to achieve their goals.

- Arora(2003) highlighted the significance of bank transformation. Technology has a definitive role in facilitating transactions in the banking sector and the impact of technology implementation has resulted in the introduction of new products and services by various banks in India.

Findings and Conclusions

AI has changed the way of banking in India. To have a competitive edge over the private sector and foreign banks the Indian banks have no option but to effectively provide quick, better and efficient service to their customers in order to retain their customer base. Though the private and foreign sector banks have an edge at present, yet public sector banks have also made a significant progress in this regard.

To conclude, with a stiff competition in the financial industries today, it is of no surprise that companies are looking and adopting new technologies in order to stay ahead of their competitors. Choosing AI in the fintech world will help in eliminating the human error boosting up the productivity.

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"A Comparative Study on Operational Efficiency Achieved through Artificial Intelligence in Public Sector and Public Sector Banks"

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"Machine intelligence is the last invention that humanity will ever need to make."

Nick Bostrom

Brief Note on Indian Banking Sector

The Indian banking system consist of 27 Public Sector Banks, 22 Private Sector Banks, 44 Foreign Banks, 56 Regional Rural Banks, 1589 Urban Co-operative Banks and 93550 Rural Co-operative Banks.

Indian Banking Industry has innovative banking models for payments and receipts. But the Indian banking industry has to be restructured to suit the needs of large number of people. The bank re-capitalization plan initiated by Government of India may increase credit growth in the Financial year 2019. The Government and Regulator have taken various steps to strengthen banking sector like two year plan to strengthen the public sector banks through reforms and capital infusion of Rs. 2.11 Crore by Government of India and the insolvency and Bankruptcy Code Ordinance 2017.

Objectives of the Study

1. To know the applications of artificial intelligence in various banking operations
2. To assess the operational efficiency achieved through artificial intelligence in public sector and private sector banks

Scope of the Study

This study covers an assessment of operational efficiency achieved through artificial intelligence between SBI and private sector banks like HDFC, ICICI and Axis bank.

Methodology of the Study

The study is descriptive in nature and is based on secondary data. The data are collected from various reports, journals, news articles, various bank portals, RBI portal and internet sources.

Mergers and Acquisitions in Indian Banking Sector

Mergers and acquisitions are combination of two or more companies into one company and acquisition is taking over one company by another company. Mergers and acquisitions are done to reduce the cost of capital, to improve company's performance and growth, to diversify products and markets, to increase market share, to adopt latest technology and to diversify risk.

Mergers and acquisition in few banking organizations are

- Merger of ICICI Bank with Bank of Madura in 2001
- Merger of Centurian bank with bank of Punjab in 2005
- Merger of IDBI bank and United Western Bank ltd in 2006
- Merger of Five associate banks and BharatiyaMahila Bank with SBI on April 1st in 2017

Merged banks are growing after merger and there is an increase in number of branches and ATMs as well as increase in number of transactions.

Banking Consolidation

In order to run the efficient banking system, consolidation of the banks is a commercial decision, whereas the recapitalization of the public sector banks is an immediate issue. Non performing asset is a major problem most of the public sector banks are facing nowadays. So, in order to sort out this issue RBI has already started recognizing the bad assets provision. The main logic behind this consolidation is cutting the cost and acquiring efficiency which is gained through digital savvy.

SBI has attained the speed of 15000 transactions per second as their current utilization is only 4600 TPS through consolidation. It has increased the ATM servicing to 59263 which makes the "future ready" and to maximize revenues which leads to significant cost savings and reduction in cost to income ratio. It also improved both revenue and cost parameters of operating profit with a growth of 17.55% year on year and the major challenge for the consolidation of banks is integration of technology as various banks are currently operating on different technology platforms.

Emerging Techologies in Banking Sector

- Fintech services
- Innovation labs
- Electronic payment system
- UPI(unified payments interface)
- Digital wallets
- Wearable technology
- Artificial intelligence and Robotics
- Biometrics, Block chain, Big data analytics(3 Big B's)

Artificial Intelligence

Artificial intelligence is a reality today and it is impacting our lives faster than we can imagine. It is omnipresent. Artificial Intelligence has become a crucial and integral part of Banking Industry. Artificial intelligence is the composition of machine learning, natural language processing and cognitive computing. The concept of Artificial Intelligence is to simulate the intelligence of humans into artificial machines with the help of sophisticated machine learning and natural language processing algorithms. The objective behind transferring the intelligence from humans to machines is to overcome all the barrier of human intelligence.

Applications of AI in Indian Banking Sector

1. AML pattern Detection
   Anti-money laundering pattern detection is the process of using artificial intelligence which is designed to control the practice of generating income through illegal actions and unethical sources.
2. Chat Bots
   Chat bots are mainly used in the banking industry in order to enhance the customer relationship management. These are the automated chat system which simulate human chats without human intervention.
3. Fraud detection
   One of the major area where artificial intelligence has excelled by providing accurate results is fraud detection. It is mainly based on neural network shell.
4. Customer Recommendation
   Customer recommendation is mainly based on using the customer data from the past and offering them various services from bank like credit card plans, investment strategies and funds based on customer preferences and their history.
5. Customer support and help desk
   Humanoid Chatbot interfaces is effective in increasing operational efficiency in customer interactions
6. Risk management
   Products can be offered to clients by looking at customer data, analyzing the risk and eliminating human errors
7. Security
   Suspicious behavior and spurious emails can be tracked down to prevent and possibly predict security breaches
8. Digitization and automation in back-office processing
   To cut down the back office processing times, capturing documents data using OCR is used.
9. Wealth management for masses
   Personalized portfolios can be managed by Bot Advisors for clients by taking into account lifestyle, appetite for risk, expected returns on investment
10. ATMs
    Image/face recognition using real-time camera images and advanced AI techniques such as deep learning can be used at ATMs to detect and prevent frauds/crimes.

Key elements of a successful AI strategy

- An integrated approach to hardware, software and data
- Speed and flexibility
- The right software and algorithms

The Comparative Study on Operational Efficiencies Achieved through Artificial Intelligence in Public Sector and Private Sector Banks

For our comparative study we have considered SBI one of the largest and leading public sector bank in India and Private banks like HDFCBank,ICICBank and Axis bank

SBI

It has launched SIA and AI powered chat assistant that answers customer's enquiries and helps customers with day to day banking activities. SIA is set up to handle nearly 10000 enquiries per second or 864 million in a day, in and around 25 % of the queries are processed by google everyday. SBI claims that SIA continuously improves after each interaction with customer and gets improved over time

HDFC Bank

It has developed an AI- based chatbot called EVA(electronic virtual assistant) which is built by Bengaluru based senseforth AI research. It addresses over 2.7 million customer queries, interacted with over 5.3 lakh unique users and held 1.2 million conversations. EVA provides answers in less than 0.14 seconds. Immediately after the launch of EVA, it has answered more than 1 lakh queries around the globe.

ICICI Bank

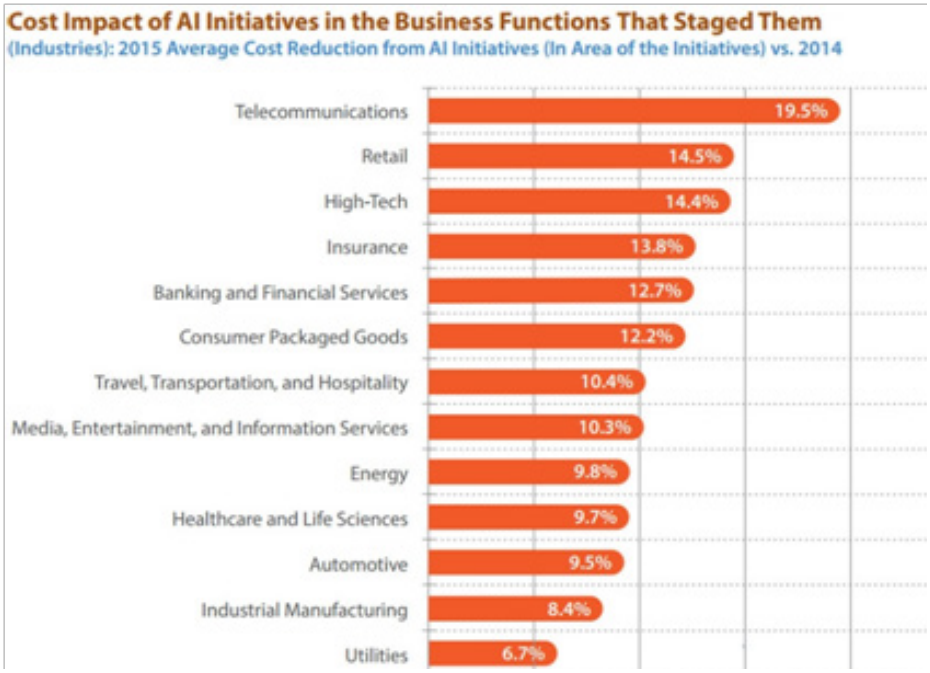
According to spokesperson of ICIC bank,ICICI bank is using software robotics for 200 business processes for various functions. In ICICI banks software robots have reduced customer response time upto 60% and increased accuracy to 100% by improving the banks productivity and efficiency

Axis Bank

Axis bank launched an artificial intelligence and NLP (Natural language processing) enabled application to help customers with financial and non-financial transactions. To help in reducing turn around time(TAT) the bank has implemented artificial intelligence across more than 125 processors which needed repetitive manual labour, according to bank officials (previously an employee spent15 minutes to do data entry and scrutiny for opening a savings account, but now the bank takes only 2-3 minutes.

Comparision

Parameters	SBI	HDFC	ICICI	Axis Bank
Artificial intelligence used	SIA	EVA	Software robotics	NLP
Operations	Customer interaction	Customer queries	Customer response time(CRT)	Turn around time(TAT)
Efficiency achieved	864 millions enquiries per day	2.7 million customer per day	CRT reduced upto 60%	TAT reduced upto 5 times



(**Source**-https://www.consultancy.uk/news/14017/how-artificial-intelligence-is-transforming-the-banking-industry)

Conclusion

This paper concludes that artificial intelligence reduces the operation time and increases operational efficiency through cost reduction. As per the study each banks has applied artificial intelligence in different operational areas where they have achieved operational efficiency. Still there is a scope for application of artificial intelligence in other areas of banking operations which will further improve their operational efficiency. But there is scarcity of human resources with the right data science skills. All consumers are not comfortable and confident in using artificial intelligence in banking sector. Through the artificial intelligence there is a cost impact of 12.7% in the banking services. Artificial intelligence is always accompanied by the threat of safety and security of customer data and transactions which has to be regulated through stringent cyber laws framed by the central government

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Artificial Intelligence in Biometrics and Face Detection

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Abstract

In 1956 John McCarthy first coined the term Artificial Intelligence, he defined it as "the science and engineering of making intelligent machines", and development of computer systems able to perform tasks normally requiring human Intelligence. Biometrics is a technical term for measurements and calculations, it refers to metrics related to human characteristics. With the wide spread of AI touching every possible field, advancements in the field of Biometrics has come a long way. In this paper we aim at introducing the readers to the basic principles of AI in Biometrics, performance of Biometric Systems in terms of false match rate (FMR), failure to enroll rate (FER), equal error rate (ERR), which have reduced extensively after the use of AI. Its application in the banking industry, explaining the use of Iris Recognition, for easier and safer withdrawal of money, in National Security in terms of Skynet: China's best Surveillance System, which uses Face Recognition technology to its full potential. After describing the applications, we define Biometrics of Intent, which surpasses the traditional scope and ambition of this Technology, a new era of Biometrics, one where cognitive sciences and neurobehavioral insights such as heart rates, breathing, eye movement, will be integrated into screening process, which help identify potentially dangerous individuals.

Keywords: Biometrics and Artificial Intelligence; Biometrics of Intent; Artificial Intelligence and Banking; Artificial Intelligence in National Security; Face Recognition; Biometric Systems

Introduction

Biometrics is a technical term for measurements and calculations, it refers to metrics related to human characteristics. It defines a person's identity based on the statistical analysis of their physical and behavioral characteristics. It is mainly used for surveillance or to grant access. There are broadly two types of biometric identifiers, based on physiological or behavioral characteristics. Face recognition, fingerprint scanner, iris recognition, DNA matching are examples of physiological biometrics, they are based on the composition of an individual. Behavioral biometrics depends on the unique ways in which individual acts, their gestures, walking patterns etcetera. The earliest applications of biometrics dates back to 1907, where the Hungarian police for first time used the fingerprint on a wine glass at the crime scene to solve a case. The next big step was in the creation of identification systems and database management in 1960. After these, followed the first real time facial recognition is 1991, with iris scanner in 1995 and biometric passports with RFIDs in 2006.

Today this same technology has reached great heights, in the names of Touch ID, Iris Recognition, Voice Assistants, and Infrared Cameras which help in faster and real time applications of facial recognition.

Artificial Intelligence was proposed decades ago with an attempt to develop intelligent algorithms which could mimic the visual cortex of the brain. Up until now, these were implemented as artificial neural networks which were too simple in terms of their structure and number layers to tackle complex real world problems like biometric recognition. In recent years, with the introduction of powerful and affordable GPUs and with the availability of large volumes of labelled data led to the emergence of Deep Learning as state of the art approach. Applications of Deep Learning include Natural Language Processing (NLP), computer vision, information retrieval and finance. Biometrics Recognition has been one of the most successful application of deep learning. This paper aims at introducing some applications of biometrics and Artificial intelligence in tackling real world problems, and building stronger security systems.

Performance of Biometric Systems

Performance of biometric systems is based on few metrics. False Match Rate (FMR) also called as False Acceptance Rate is a measure of the percent of inputs invalidly accepted. The system gives a match score, which is the probability of the similarity between the input pattern and a template in the database. If the score is greater than the threshold, the input is treated as genuine. False non-match rate (FNMR) is the probability that the system fails to detect the match between the input and the template in the database. It is a measure of valid inputs incorrectly rejected. The performance can be plotted in a ROC (Receiver Operator Characteristic) in a DET (Detection Error trade-off) plot. The DET curve gives uniform treatment to the two kinds of errors, and uses logarithmic scale for the two axes, which spreads out the plot and better recognizes diverse well performing frameworks, and for the most part creates plots that are near direct. In general, the biometric system sets a threshold, for an input to be identified as a valid match, i.e. how close it should be to be considered as a match. If the threshold value is higher, the FMR reduces, but FNMR increases, conversely, if threshold value is reduced, FNMR decreases, but FMR increases. Determination of the correct value of threshold is one application of Artificial intelligence in these systems.

Application of neural networks include face recognition, computer vision, Natural Language Processing (NLP). The most successful application of deep learning models is in biometric recognition. Biometrics in particular has tremendously improved with new models starting to emerge. Advancements in Computer vision make it possible to accept any kind of input, without the worry about the quality, hence reducing False Enroll Rate. Advancements in convolution neural networks, which is a biologically inspired model, have immensely helped in making the better performing facial recognition models.

Safer withdrawal of Money through Iris Recognition

Iris recognition is a method of identifying ring shaped patterns within the eye of human being which have complex patterns and varying colors that are visible upon close inspection. It is carried out, by gathering high resolution images of the pupil using digital cameras working at visible or infrared wavelength, and then using a specialized program to compare the subject's iris pattern and match with images stored in the database. The Biometric Iris Recognition technology is being used in more than 1000 ATM machines in financial institutions in Chicago and Montreal in lieu of debit cards. Iris recognition is most viable in the banking industry for the following reasons. Iris doesn't degrade with aging, it has more than 266 degree of rotation, which serves a pool of distinct

features associated to one individual, which improves the reliability of the biometric system, and the likelihood of damage or scratches to the iris is minimum as is it protected behind the eyelids, cornea and aqueous humor.

Iris recognition technology consists of three basic steps:

- Image capture: A high resolution image of the subject's eye must be captured, which can be automated or manually done, but it must be ensured that the iris is in proper focus and a clear image is generated.
- Locating the iris and optimizing the image: First the iris recognition framework enhances on the concentration and clarity of the picture. Then the boundaries of the eyes and the center of the pupil are identified and the analyzed for suitable feature extraction and analysis. The optimized image is converted into encoded structure features of the iris, which are formed by applying Daugman's rubber sheet model, which can be used to match the biometric templates in the database.
- Template storage and matching: The encoded structural features of the iris are stored in the database at the time of enrollment, and at the time of identification, the structural feature can be matched with the biometric templates stored in the database.

National Security through Face Recognition

A facial recognition device is one that takes an image or a video in real time and compares it to a set of available faces in the database and tries to create a match of the individual in it. The structure, shape and proportions of the face are compared. The distance between the eyes, size of the nose and jaw, the area surrounding the cheek bones are also compared. The mega-city of Chongging, in Southwest China uses this feature of biomimetic infused with artificial intelligence through a $2.6 billion project by installing 500,000 cameras across the entire city making it one of the world's largest security surveillance system. Deep learning technology used in the software improves the system by about 500% when compared to conventional systems. New algorithm that combines the features of machine learning and deep learning method, suppresses the error and enable recognition of individual in situations which was difficult using conventional systems (like the face from the side, part of a face covered by sun glasses etc.). The demographics of the crowd can also be identified using these systems, so they are not limited to only dealing with hard identities.

Biometrics of Intent

The present biometrics, however go way beyond speech, voice images or fingerprints. They are able to analyze different information and end point cooperation for example dexterity, weight, hand tremors, navigation and other finger gestures. The objective of biometrics of intent is to push the biometrics identification techniques to another wilderness where covert security innovation would examine people's minds to decide whether they harbor any malicious intent. This ability can be used by the national security or military forces to easily identify the enemies prior to any action. With this technology being fruitful in reality, the "biometrics of intent" for instance could help decide if the restless looking man at the airport is just having a bad day or is walking around with the intent to kill his manager. Studies on test subjects' behavioral responses in term of electroencephalographic (EEG - measures the electrical activity in the brain) and functional magnetic resonance imaging (FMRI - measures the neural blood flow), heart rates on viewing positive, negative, and neutral images help analyze the emotional state of an individual. With all the available data, one can use it to feed it into any Artificial Intelligence model, which is capable of detecting anomalies, and variations in the data, which would put a clear distinction in detecting

an individual with malicious intent. The ultimate goal that can be reached is to set up a databank of individuals' typical psychophysiological and behavioral responses to different mental states and utilize it to separate the physiology of intent mental states.

The concept of biometric of intent can be applied towards personal privacy and security towards sensitive information. The concept is based on analysis of behavioral biometrics: Key Interval Time (KIT) data through the use of artificial intelligence techniques as an effective means of identifying and distinguishing humans from one another. Every individual has a significant key stroke pattern, which can be exploited to associate it as an identification of that particular individual.

Nudata is a biometrics and behavioral analytics company that identifies its users based on the users' interaction with their products. BehavioSec is another company that uses machine learning in order to detect fraud for customers.

Conclusion

Due to the relatively recent advances in computation technologies, the concept of Artificial Intelligence has finally escaped the fantasies of mathematicians to become a major aspect of modern businesses and even lifestyles - from Youtube's AdSense detecting policy breaches in uploaded videos to Siri. Artificial Intelligence has helped solve several real world problems and continues to grow in application by the hour, making possible things that for decades have been passed off as hopeless fantasies, and this is merely the dawn of artificial intelligence technology. Who knows what wonders the future might hold?

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Artificial Intelligence in Indian Banking : Challenges and Opportunities

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Artificial Intelligence (AI) is fast developing as the go-to technology for companies across the world to personalize experience for individuals. The technology itself is getting smarter day by day, allowing more and newer industries to agree to the AI for various applications. Banking sector is attractive one of the primary adopters of AI. And just similar to other segments, banks are discover and implementing the know-how in unlike ways.

The applications of AI encompass to carry smarter chat-bots for customer service, personalizing services for individuals, and still insertion an AI robot for self-service on banks. Away from these fundamental applications, banks can put into practice the technology for bringing in more capability to their back-office and even reduce fraud and security risks.

Arrival of AI banking in India

According to Accenture's current Accenture Banking Technology Vision 2018 report, 83% of Indian bankers deem that AI will labor flanking humans in the subsequently two years - a higher than the global average of 79%. "93% bankers in India said they gradually more use data to drive critical and computerized decision-making. More partner-supplied customer data means a higher degree of duty for banks. Yet, 77% Indian bankers harmonize that most firms are not ready to confront impending waves of corrupted insights from untrue data," said the report.

AI is not new to India. Research institutions and universities have been working with a range of AI technologies for decades, and particularly in the area of social revolution. With enabling technologies becoming a lot more available and reasonably priced, AI is now becoming mains tream, with large enterprises and start-ups looking at different opportunities.

"Function of AI and ML (Machine Learning) to different functions surrounded by the banking industry has enabled them to offer a far more personalised and competent customer service. By achieving that, banks have also been able to increase better insights into their customers' preference and expectations from the bank. so, automation of back-end workflows has shown better outcomes.

According to various industry reports, more than 36% of large financial institutions are already investing in such technologies, and close to 70% are planning to in the near prospect,"

Not Just Customers Hold up

State Bank of India, the principal bank in India, last year conducts "Code for Bank" hackathon to hold up developers to construct solutions leveraging innovative technologies such as AI and Blockchain into the banking sector. Private banks like HDFC Bank and ICICI Bank include by now introduced chat-bots for customers service. Some have even gone ahead with placing robots for customers service. Last year, Canara Bank installed Mitra and Candi robots at several of its branches.

"Payment companies are using AI to offer tailored payment experience to consumers. By means of applying AI and analyzing precedent payment patterns, payment systems can punctual the favored payment gadget which best suits a purchase at the time of checkout. Say a consumer avails EMI option regularly for his big-ticket purchases, after that the best EMI opportunity is made obtainable to the consumer at the time of checkout. Such personalized consumer experiences drive up consumer spending and creates adhesiveness to the product consumers are using," said Varun Rathi, cofounder and COO, Happay, a Bangalore-based start-up focused on digital payment solutions.

Pune-based Persistent Systems' chief architect, corporate CTO, Abhay Pendse list out some frequent uses of AI in banks

Scam Detection: Abnormality finding can be used to increase the precision of credit card fraud detection and anti-money laundering.

Customer Support and Helpdesk: Humanoid Chatbot interfaces can be used to boost efficiency and decrease cost for customer relations.

Risk Management: Customized products can be offered to clients by looking at past data, doing risk analysis, and eliminating human errors from hand-crafted models.

Security: Suspicious actions, logs analysis, and bogus emails can be tracked down to put off and possibly forecast security breaches.

Digitization and Mechanization in back-office dispensation: Capturing credentials data using machine learning/AI to generate insights from the text data can to a great extent cut down back-office processing times.

Wealth management for loads: Personalized portfolios can be managed by Bot Advisors for clients by taking into account lifestyle, craving for risk, expected returns on investment, etc.

ATMs: Image/face detection using real-time camera images and sophisticated AI techniques such as deep knowledge can be used at ATMs to detect and prevent frauds/crimes.

Not Without Challenges

A broad implementation of a high-end technology like AI in India is not going to be exclusive of challenges. From the lack of a convincing and quality data to India's diverse language set, experts consider a number of challenges survive for the Indian banking sector by means of AI.

According to Accenture's Rishi Aurora, "A key confront is the availability of the right data. Data is the support of AI, and any susceptibility arising from unverified information is a serious

concern for businesses. Imagine for example, the risks that could arise from KYC fulfillment AI systems if the data sources are untrue. Or consider the efficiency of a fraud detection AI system without the right kind of data. prepared mechanisms for collect, validate, standardize, correlate, archiving and distributing AI applicable data is essential."

"Data admission and data privacy is a central facet of any AI work banks do. These aspects will be of dominant importance with foreword of regulations in Europe such as GDPR (General Data Protection Regulation). GDPR regulation is currently pertinent to European citizens, but India and other countries have their possess data privacy regulations. Banks in India will contain to build AI systems with GDPR and comparable privacy regulations in mind". Experts also have also anxious the need for more skilled engineers to coerce the segment.

"The major challenge is the scarcity of skilled human resources; the accessible workforce is not familiar with newest tools and applications. Secondly, the AI technology is a big danger to superfluous employees in the banking sector. The mass recognition of AI may root a serious unemployment hinder in the segment," said Rachit Chawla , CEO of Finway Capital, a Delhi-based non-banking financial company.

One of the important challenges that is faced by Industry and not just banks in India is unavailability of people with right data discipline skills. With only little number of good data scientists obtainable to do AI work, the industry requirements to work with universities in India to build up skilled data scientists as well as develop in-house training programs to train employees on data science skills. Also recognition of right use cases for AI execution with the help of area experts and data scientists can help banks in successful implementation of AI technologies for banking functions.

How Artificial Intelligence Is Shifting The Banking Sector

Technology is the heart of almost every task we take on even on a minute level, and industries are captivating up the cause of mechanization. This relegates technology's position from being just an enabler into a disruptor of conventional ways, which cannot be unnoticed. Transformational strategies entail to be molded around the benefits of technology, to leverage maximum profitability. Sector-wise, technology is riding the horse of destiny and guiding companies to productive growth, with ease. If one talks about the banking sector, the acceptance has been steady, when compared to other sectors. This can be due to the reality that banking is still a manpower-led segment, with operations that necessitate human involvement. Yet, technology is wily compatriot that is steadily seeping into the ranks, efficiently cutting down on superfluous tasks. This makes the operations more tranquil and impactful, creating a leaner system to work on. AI, cloud computing, mobile-first and digital dashboards are by now the norm, as new technologies are being adopted.

These are few of the areas of Artificial Intelligence technology in Banking and Finance:
Personalized Financial Services

Personalized connect will attain novel heights as automated financial advisors and planners give knowledge in making financial decisions. They study market temperament alongside the user's financial goals and personal portfolio, and tender recommendation on the subject of stocks and bonds.

Smart Wallets

Digital wallets are touted as the vision of real-world payment technologies, with prime players like Google, Apple, Paypal and others, jumping on the bandwagon and mounting their own payment gateways. This decreases the dependence on physical cash, thereby expanding the reach of money to larger levels.

Underwriting

The insurance sector is also impending up with a storm as they are touching towards congruent automation. By utilizing AI systems with the intention of automate the underwriting process, the organizations get nearer equipped with more coarse information to give power to their decisions.

Voice Assisted Banking

Physical incidence is gradually vanishing away as technology empower customers to use banking services with voice commands and touch screens. The natural language technology can process queries to answer questions, locate information, and union users with various banking services. This reduce human error, systemizing the competence.

Data-driven AI applications for lending decisions

Applications entrenched in end-user devices, personal robots, and financial institution servers are competent of analyzing massive volume of data, providing customized financial advice, calculations and forecasts. These applications can as well develop financial plans and strategies through research, regarding different customized investment opportunity, loans, rates, fees, etc and pathway the progress.

Customer support

As speech processing and natural language processing technologies grown-up, we are drawing faster to the day, when computers could handle most customer service queries. This would mark an end to waiting in line and hence result in happier customers.

Digitalization as an alternative of branch lines

Banking is a long-lasting progression, with past records of long queues and lethargic response marring the productivity. Even opening a bank account was viewed in unenthusiastic terms as harried consumers would run pillar to post, while receiving the necessary documentation complete. Digitization of documentation eases that pain and creates a comprehensive platform, where the consumers and providers bond.

Block chain hastening payments

The customer base that banks serve is going through a key move in terms of buying behaviors and preferences, driven by the digital revolution, mainly social media and mobile. An increased demand for more choice and control in how they interact with a bank is on a rise. Lethargic payment processes will be a obsession of the past as Blockchain is set to inculcate the advantage of real-time payment process, hastening up the procedure of payment, by this means increasing support and satisfaction.

Conclusion

A digital explosion is certainly captivating place crossways all segments of banking and we are enthusiastically in anticipation of the other invigorating changes that this segment would bestow upon us. The factors may vary from bank to bank yet the root of the motion would remain skewered towards technology at outsized. In conclusion, we at are at cusp of an artificial intelligence revolution. Improvement and development in the AI industry will increase efficiency at a condensed cost. Managers across industries will have to raise their ante on skill-set up shade.

Future View

The AI revolution is not only limited to the banking sector. There are a number of other industries that have already witnessed the blow of AI. Some of the highlights of the industries include automatic delivery of an aesthesia for standard actions, thus helping in cost reduction, superior customer service, robo-advisers that provide recommendations to financial clients based on financial data or the arrival of self-driving cars. All these will help the industries in replacing ordinary and repetitive jobs like form filling and back-end verification.

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PwC FinTech report – Redrawing the lines: FinTech's rising influence on financial service.

Artificial Intelligence: The Future of Communication?

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Abstract

With the invent of computers there was always a doubt for human kinds future existence. As the years passed and technology progressed that very question of existence has come to a huge reach. But why not talk of co-existence? Social Media and Digital Market of the future will soley depend on the future AI as it's next best thing. With the rapid progress in technology and with the change of modern society will have to depend on AI for smooth operation.

Digitalisation has already been made a huge part of our life and we depend on it for a easier life. AI has already started to take its place in our lives. This paper will be talking about how and if AI can or cannot co-exist with respect to the marketing sector in an organization.

In this paper the authors make an attempt to present a conceptual over view of AI and it's impact on various areas of marketing by analysing various journals and published materials on the emergence of artificial intelligence.

Keywords: Artificial Intelligence, digitalisation, marketing , co-existence, future, development, deep learning, internet .

Introduction

When we think of artificial intelligence we think about robots, but in reality artificial intelligence refers to an intelligent system that uses an algorithm so as to perform any mathematical computation. Artificial intelligence is a big field and we have tried to explore the full breadth of the field. Artificial intelligence marketing is a method of leveraging customer data and AI concepts like machine learning to predict the customer's next move and the improve the customer journey and fulfill the needs of the customer.

In the Information age more evolved systems are noticed day by day. The search for highly informational and personalized content are very difficult and there's a high demand for every social network. Artificial intelligence has been introduced to people in many forms and especially in movies, even though the films belong to science fiction the explanations given in the scripts about the creation of these machines are based on the general concept of machine intelligence which imitates the human brain. Artificial intelligence is basically Man Vs. Machine, and artificial intelligence started as a field whose

goal was to replicate the human level intelligence and replace the AI in place of humans. But the ever progressing technology, it's tough to expect what the next big move or thing that AI can achieve. Each developer or coder thinks in a completely different angle even when working on the same grounds. It's upto the person developing the program and the person writing the algorithm to use their innovation along with pre planned information and data to write the most acceptable code for grounds in AI for public use while making sure that the bridge or barrier between human and machine isn't breached.

Digitization

In the 1950's the word digitalization took the organisations by a whole new sweep. It opened up the world to a whole new way of saving , searching and recalling of memory and downloading, it showed people how they could save any form of information on remote disks and computers which in turn could be accessed by anyone , anywhere in the world irrespective of the geological conditions. Even though it was still in its beta stages , we knew that it would somehow show us the way to a faster and more innovative future. A future that not only be dreamt about but could be experienced to. In todays day and age, digitization has gone a long way compared to back when it was invented. Today, anyone can gain access to any information anywhere with or without the pain of going through or long wait process. The future of digitization with respect to Artificial Intelligent is something that everyone is looking forward to, as with every coming day some aspect of organization is being invented and there much easier ways to get the work done. Digitization has not only proven that things could get easier but it has also proven that the future may not be that far away as we thought.

Deep Learning

The aspects of deep learning can be traced straight to Artificial Intelligence because the way Ai works is how it can learn from past experiences of human behaviuor and trace the current doings to predict the future and have the human wants and needs set before hand. That is what Aritificial Intelligernce is all about. As seen before, the main core ground of what AI is based upon is digitization as it collects data to to predict the future. Which we can call as Deep Learning. The main idea behind AI is to compile this data and to help the computers to give us humans the appropriate need for the moment. Some might call this data mining but that is what Ai is all about.

Co-existence

With AI people only talk about the future tech taking over human kind and it taking over human beings as a species. Everywhere we look and every person we speak to, they only talk about how AI is harmful to our species and how we while planning up new directions for technology might also result in the harm to our race. Everyone always talk about the bad of AI with admittedly a little bit of good. But why not co-existence? AI is as smart as we design it to be. We as humans can rely on AI for our day to day work but we might even be already be using it with our social media browsing and to run our media centers. The day is not far where we will have to co exist with AI and when we do, it will help our organisations in the field of marketing. For marketing a product we now have multiple people carrying out immense amount of research while expending a lot of time doing so. With the help of Ai we can get the researched data at a click away and know the markets wants and needs without expending a lot of time. The amount of work done in a set amount of time can have better smaller ratios yielding better results without having to worry about the conundrum of fact checking.

Internet

We know when artificial intelligence and internet get together they will transform both the Internet and Global economy in a very limited time . Artificial intelligence plays an important role in internet of things applications and developments. All the companies and start ups that combine with artificial intelligence and internet of things have become successful and have come up in the past few years . Big organisations across industries are already exploring the power of artificial intelligence and internet of things to deliver and to work efficiently in an organization . India is one of the countries where a lot of innovation and creativity is happening around internet of things across different verticals and technologies. Artificial intelligence can give lots of data meaning with respect to creating models and the concepts . Technology will become a part of everyday life even more and it has already became a part of everyone's life. Artificial intelligence also helps to create web design and development. With more and more start ups coming to light with the help of artificial intelligence it is sure that the government might open up its funding and promote artificial intelligence for the country and to help maintain the governing bodies . When these governing bodies and start ups come together they help our country grow in aspects where no one has yet touched upon and it helps to grow the country's economy and opens a whole new sector. With make in India intiative in full swing and we are sure that the future governing bodies will one day rely on artificial intelligence . That day is not far.

Marketing

Marketing in an organization is a pain staking process for the research team as they have to spend a lot time, money and energy in learning what the market response to a particular product would be and to learn the next market needs. With Ai working hand in hand with humans in an organization, the research and the prediction of future market needs gets easier and this in turn helps the organization reach its goals much easier and much earlier than the expected time frame. When an organization has an integrated Ai team working hand in hand to achieve goals, it helps them have a clear edge over the competing organization who have only individuals working on a project. It helps the organization to progress ahead without wasting time and to get the work done.

Future

With the rapid progress in the field of Ai, we cannot expect the future of the same. The organizations that have already started to adapt and work side by side with AI have shown that technology has and been progressing day by day. It helps in developing AI to a whole new level as it learns new information everyday. It is with this that AI grows and adapts with new information.

Conclusion

With all these rapid progress we can be sure that the future isn't too far away and that Ai can soon help in all organizations. It is only a matter of time until AI helps in all the aspects in an organization and the future grows by leaps and bounds.

Artificial Intelligence in Banking Sector

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Abstract

Conversion of data in digital format through technology is digitalization .as the banks have embraced digitalization it has resulted in reduction of human errors and has provided convenience to customers reducing time, people have round the clock access to online banking Technology has removed much of the face to face bank-customer interactions like fingerprint readers, card readers and new and emerging and financial technologies ensuring privacy and minimizing or reducing fraud concerns with increasingly innovative technologies .

Banking institutions are working towards delivering their financial services Artificial Intelligence (AI) is fast evolving as the go-to technology for companies across the world to personalize experience for individuals. The technology itself is getting better and smarter day by day, allowing more and newer industries to adopt the AI for various applications. Banking sector is becoming one of the first adopters of AI. And just like other segments, banks are exploring and implementing the technology in various ways.

Keywords: Digitalization, Technology quality standard, Financial services Artificial intelligence

Introduction

Financial services industry due to change of consumer behavior, customer expectations and adoption of technology is going through dramatic changes. Digital banking is now an important feature in today's world. There is plethora of options that customer can adopt when it comes into banking. The advent of technology has made people to prefer anything online. A special area of innovation – Artificial intelligence and machine learning is the face of advanced technology and people are embracing it in both personal and business banking areas. Two key factors that have influenced this shift is the development of the internet and the dramatic reduction in the cost of technology. Technological if embraced in a right way will generate a banking system for customers and citizens into the future

What is Artificial Intelligence?

By definition, Artificial Intelligence is nothing but the intelligent and proactive actions that devices and applications perform without active human intervention. Such machine led automated as well as intelligent activities are visible on many fronts including machine learning, natural language processing, machine analytics, chatbots, algorithms, etc.

Review of Literature

Secondary data is being used to give a greater understanding and insight into artificial intelligence and to present with challenging demands that are required for banking sector to have competitive edge

Artificial intelligence in Banking Sector:

Incorporating Artificial intelligence in banking sector will help to improve efficiency, keep up with digital trends and satisfy customer demands and can be there for the customers to help them improve their financial lives, which in turn will help banks to pivot their strategies in order to preserve customer loyalty. Banks can use AI to customize products and advertising based on need, life stage, and behavior by combining information from transaction histories, prior inquiries, geolocation, customer search history, and even social media sites. For instance, a bank could analyze a customer's transaction history to recognize an airline preference and then send a notification via the bank's mobile app to inform the customer of a new credit card partnership with that airline.

The pace at which companies are investing in artificial intelligence (AI) continues to gain momentum and the financial sector is not immune to this trend. According to research by global management consultancy Accenture, banks that invest in AI and human-machine collaboration tools could boost their revenue by over a third (34 per cent) by 2022.

Advent of AI banking in India

According to Accenture's recent Accenture Banking Technology Vision 2018report, 83% of Indian bankers believe that AI will work alongside humans in the next two years — a higher than the global average of 79%. "93% bankers in India said they increasingly use data to drive critical and automated decision-making. More partner-supplied customer data means a higher degree of responsibility for banks. Yet, 77% Indian bankers agree that most firms are not prepared to confront impending waves of corrupted insights from falsified data," said the report.

Common uses of Artificial Intelligence in Banks

1. ATMs – To detect frauds
2. Security- Spurious emails if any can be tracked to prevent and predict security breaches if any
3. Customer support and help desk – Good customer service and encourage customers to remain loyal
4. Management of wealth –To guide the customers on expected rate of investment
5. Risk analysis – informing customers in risk analysis and elimination of human errors

Challenge and opportunity in Banking sector

1. Scarcity of trained human resources
2. Unavailability of people with science skills background, training programmes are required to improve science skills
3. Mass adoption of Artificial intelligence will lead to grave unemployment problem but it's going to take a big investment to make that happen. Technology will eliminate jobs that are repetitive and require less human judgement.
4. Advances in Artificial intelligence will definitely will happen even if the banks participate in it or not, it is going to happen.
5. Artificial intelligence can also free employees from mundane tasks so that they can focus on being better in strategizing and doing complex activities.

6. Financial ups and downs are beyond recognition of human minds; however, Artificial intelligence with the use of algorithms can automatically prompt better decisions. AI renders more independent decisions which often results in raised financial growth and preparation for the future.
7. Artificial industry has impacted Banking industry which makes it to keep up with competition and increase their standing. Over the coming years, these systems are only set to become more and more accurate and fast with the continuous innovations and improvements in the field of artificial intelligence.
8. Bank customers are becoming more and more demanding. In the age of Google, Apple, Facebook and Amazon, we have become accustomed to personalized offers building on data that we have voluntarily provided

Critical Challenges

1. Changing consumer dynamics- Friction need to be removed from customers, change should come within and banks have to face more competition and affordable ways need to be done to accomplish tasks
2. Retention of customers- retaining customers is a very big challenge, banks need to meet customers and must always be available to them and solving their problems instantly and providing most innovative and hands on service.
3. Use of Virtual assistance – Banks need to provide assistants who work like chat box and answer queries and solve problems as customers nowadays don't want to wait for an answer, these kinds of interaction happen only if there is a well-defined and integrated platform

The bank's internal systems are made easier to track and deal with individual customers, that is governed and used to serve customers and optimize running the bank.

People with required skills to build and maintain the robots, more data engineers and data scientist are required, an attempt should be made to enhance rather replace existing workforce

How will the Banking sector be affected?

1. Improved and cost effective customer service, playing a role where it is not possible for a human being to bear the burden of all the customers
2. Better management is possible The Artificial Intelligence powered solution can provide a full report with all references and facts, thus helping both the bank and the company.
3. Know our future prospects and returns with a targeted AI solution, you can keep getting continuous updates on various offers available and build on your current assets to increase your returns. Also, you don't have to start from scratch as the AI will do all your work for you. Once you have an AI system in place, it will keep your account safe from market fluctuations.
4. Precise investment information and research- The finance sector is a volatile one, and many a time there and many a time, there are crucial decisions that need to be made. In this case, it is but natural to choose the expert programming of an AI over human predictions and trust the AI's continuous learning methods to forecast better. If the bank has an AI system in place, it can provide all the research and reference along with exact facts and figure to help make the best possible decision which will then be an Invaluable asset in the financial sector and will continue to be in the future

Building a better customer experience

Significant shift in customer expectations is seen over the past few years, the trend is growing stronger as comfort with digital banking grows with disposable incomes, Artificial intelligence will serve with superior insights to their customers' needs and preferences and giving them ability to tailor their offerings and attract new customers

Conclusion

Artificial intelligence has become a reality today, what we see around is just the beginning we cannot deny that in the years to come it will be crucial and integral part of our life. Banking being an early adopter will grow exponentially in the future, and to stay competitive in this cutthroat environment by revolutionizing and transforming the very face of routine operations They can quickly pinpoint the issues from thousands of log entries which are often time consuming and erroneous when a human mind handles them.

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A Study on Consumers' Online Purchase Intensions of Groceries through Mobile Applications

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Abstract

Online shopping is a revolution in consumer markets as it can provide a convenient shopping experience to the customers. It offers lot of benefits to the customers in the form of time, cost and utility. It has extended its presence from offering electronic products to daily necessities. One of such offerings are groceries.

As the groceries are daily necessities to the customers, they have many questions in their mind about buying groceries online. In the changing world of buyer's market, identifying the needs and wants of the customers and understanding the consumer attitude is the challenging task.

Online grocery shopping has been noted of being a relatively young but promising area of electronic commerce. However, only a sparse number of studies have been focusing on consumers' intentions to purchase grocery products online in the cross-cultural context.

There is a need to explore the buying intentions of customers to buy groceries online. The present study will explore the purchase intentions of customers while they purchase groceries online.

The present study was based on available literature on online shopping of groceries and understanding customer attitude towards it. The main objective of the study is to determine the customer perception towards online grocery shopping.

Keywords: Buying intensions, online shopping of groceries, customer perception, and electronic commerce.

Introduction

The revolution of internet has far reaching impact on the online retail business in India. The growth of usage of internet by the users made them to find more convenient ways to shop online. The number of customers buying products and services online is also growing for the last few years. The most common products purchased online are textile, electronic products, and footwear and beauty products. In the recent years there is a considerable change in variety of products purchased online by the consumers.

The variety of products range from furniture to automobile, accessories to spares and staple food to groceries. There is change in the lifestyle of the consumers, which made buying decisions to change.

Increase in number of nuclear families, changing consumption habits, increase in disposable income, and change in profile of husband and wife and busy life style lead to switching from traditional buying of daily necessities to online shopping. Groceries is not exception to the consumers in urban areas.

Due to various benefits like ease to shop, comparison of products, price discounts, more variety of products, easy to place order, door delivery, cash on delivery and reviews on performance of the products, the consumers are preferring to shop groceries online with the help of website and applications (Farida Khan 2015).

Even though there is a trend towards online buying of groceries, but still there are concerns about online shopping like, food safety, hygiene, payment risk, return risk etc. Besides, in order to increase consumer's trust, food retailers should also proactively provide accurate and sufficient information about their food products online (Anh Kim Dang et. al. 2018).

Review of Literature

The consumers buy groceries online mainly because of offers and discounts, variety of product available, free home delivery, website user friendliness and cash of delivery payment option. Purchasing unique and special items and best price offered are another reasons for buying groceries online and demographic variables, such as gender, age group don't have influence of the factors of customer satisfaction (S.Sathyaraj et.al. 2015).

Even though the there is an explosion of internet and mobile technology, most of the consumers still prefer the conventional way of shopping of groceries. Awareness and accessibility are two major challenges for growth of online grocery retailing in India which need to be handle properly (Snehal Chincholkar 2016).

The flexibility, anywhere and anytime to buy the products, less time taken to search for products, comparison of products and availability of information are the reasons for consumers to prefer online shopping of groceries. Delay in delivery, risks in payment, lack of privacy etc. are some of the reasons for disliking the online shopping (Zetty Madina Md. Zaini et.al. 2011).

Some of the housewives and employed females prefer to buy groceries from general stores in spite of online grocery provides convenience, ease, privacy and saves time. They prefer to groceries online from reputed online sellers due to time saving and ease of ordering (Krunal K. Punjani 2017).

Most of the customers prefer to buy groceries are women than men. Most common reasons to shop groceries online are saving of time and effort, on average customers for this model are satisfied with the quality of the products received by them, also the sellers are providing customers with option of replacement. The expectation of a customer while buying groceries online and in physical market is totally different (Himanshu et.al. 2016).

Most of the consumers shopping online are young and they purchase the groceries on monthly basis. While purchasing online the customers were able to compare the rates and number and type of variants available on other online grocery shopping platforms which gave them an assurance that the purchase they were doing was worth their money (Mariam Saleem et.al. 2018).

Behavioural intentions and attitude of consumers while they shop online are influenced by perceived behavioural control, knowledge and ability to buy groceries online and ease of buying. The attitude of consumers will positively influence the consumer's intentions to shop groceries online (Amol Ranadive 2015).

Objectives of the study

This research is undertaken the following objectives

- To study the purchase intensions of consumers of groceries online with help of mobile applications.
- To study the attributes that influences the consumers' purchase intentions of groceries online.

Research Methodology

The present study aims at understanding purchase intensions of consumers of groceries online with help of mobile applications and identifying attributes that influences the consumers' purchase intentions of groceries online.

The study was based on previous works done by researchers in the area of online shopping of groceries. Review of available literature was done and gap areas were identified. The study was purely based on secondary available about online shopping.

While consumers shop online, their level of awareness about online shopping is a crucial factor which determines the consumer decision making. Awareness about modes of accessing online shopping, searching for products and buying products.

As the consumers aware of online shopping, they tend to go to websites to search for products and services to buy them. Consumer decision making is the critical stage in online shopping and it can be influenced by various factors.

Discussions

The consumers are aware of their purchase intentions towards online shopping of groceries in the country. The common intensions to purchase groceries online are ease of shopping, price benefit, door delivery, price and product comparison, flexibility in shopping, scheduling of delivery etc.

They are few concerns along with benefits in online shopping of groceries. The major concerns are privacy, financial risks, return policy, virtual carts, trust among people who deliver groceries and saving time.

Most of the studies revealed that even though there is shift towards online shopping of groceries, most of the people still prefer to shop in the traditional way as the awareness an accessibility are less in the market.

According to changing trend, the customers who buy groceries are focusing to maximise their benefits in online shopping. Many efforts are being made by the customers to optimize their presence in the digital world. As the competition is becoming intense online the online retailers are now able to offer different variety of fresh and packaged food items, which can be easily transported and delivered to the customers.

The trend may change further in the future as the online retailers can offer more convenient services to the customers as they tend to buy products more online. Mobile applications will also play a significant role in bringing groceries online so close to the customers.

Conclusion

Though online grocery shopping is not for everyone, but there is a growth in the digital presence of customers. This trend may continue in the future with the help of mobile applications, which can provide a convenient shopping.Online retailers must understand the needs of customers of groceries and make their products available online. Making mobile applications user friendly, providing more variety of products, building the confidence among customers about online shopping and providing the additional benefits might bring more online grocers. Making it a smooth, simple

and seamless online experience is key. The online retailers should focus on service quality and delivery should be improved. The websites and applications need to be more dynamic to make the online grocery shopping experience easier, more stimulating and rewarding for customers. This is very important, as it suggests that the decision to shop online is frequently re-evaluated, creating tangible opportunities for conversion by online providers. E-grocery providers should also monitor use frequency identifying drop outs and actively targeting them with promotional offers.

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Chatbots- Strategy for Boosting Customer Experience to the Next Level

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Abstract

Companies have fundamentally shifted towards customer centric approach in decision making. They got an access to customer data. Companies are realizing impact of good or bad customer experience on retention. Customers with positive experiences are more likely to continue purchases, customers with bad experience either stop spending or decrease their spending. Communicating with the customers at the right time and right way is quiet challenging. An efficient use of machine learning and intelligence can give an opportunity to build memorable interaction with audience and build rapport.

In response to increased expectations, chatbots are cost effective solutions to bridge the gap between rising customer expectations and a company's current level of service. Chatbot offers a range of benefits that takes the customer experience to next level.

The Research Paper has been prepared with the following objectives:

- *To study the importance of improving customer experience*
- *To incorporate Chatbot into marketing strategy to drive improvement in customer experience*
- *To understand the Challenges in implementing Chat bots and measure to overcome it*

Data has been collected from various secondary sources like journals, companywide surveys etc to analyse the issues relating to customer experiences and challenges in integrating personalized interactions through chatbots.

Keywords: Customer Experience, Trends, Chatbot, Challenges in implementation

Introduction

It was assumed that success of business were quality product, best customer service, value for money etc. But with the advent of social media and real time interactive feedback, the customers are building relationships and expecting fulfillment of promises from company. Today's consumers have large number of choices than ever before and are pursuing it through various channels. People demand experiences that are actually relevant for them and being forced to ingest stuff that is irrelevant will not bring pleasant experience. If the business doesn't save their

customers time, make their life easier and better, there will be risk of disruption by someone who can offer.

Literature review

Customer experience is an outcome of interaction between an organization and a customer over a period of relationship. The customer interaction consists of his journey, brand touch points, and the environment during their experience. If the expectations meet during his journey from all contact points, the experience considered to be good one. Customers respond both to direct and indirect contacts. Direct contact may be as a result of direct purchase or usage by the consumer. Indirect contact results from exposure to advertising, reviews, criticism, and news reports etc. The experiences undergone by customers are unique and personal. It may be memorable or not depends upon the stimulations created before, during and after purchase on sensory, emotional, physical aspects of a person. Companies by controlling the stimuli can control the reaction of the consumer. Customer may interact through web, social media or over the phone customer service or face to face interaction as in retail service.

Kotler et al. 2013, (p. 283) say that customer experience is about, "Adding value for customers buying products and services through customer participation and connection, by managing all aspects of the encounter". The encounter includes touchpoints. Businesses can create and modify touchpoints so that they are suited to their consumer which changes/enhances the customers' experience.

Methodology

The study is descriptive research based on secondary data, which was collected from Internet and other secondary sources like published surveys, books, magazine, newspaper, published journal etc.

Statement of Problem

Customers of today demand hyper-personalisation of everything. It is possible when the company leverages a deep understanding of customer preference, customer data, and conversations across channels and able to anticipate a customer's needs

Scope of the study

Study takes into account Customers interaction in traditional platform and digital platform. It is assumed that companies and customers are ready to adopt new technologies.

Objectives

- To study the importance of improving customer experience
- To incorporate Chatbot into marketing strategy to drive improvement in customer experience
- To understand the Challenges in implementing Chat bots and measure to overcome it

Trends in Customer Journey with Company

Following are the developments taking place in customer's interaction with the company product and services. Companies are taking measure to retain the customers.

- Customers hate waiting, often we could see them waiting over phone while employees figure things out or looking through information to solve queries.
- Company used to rely on employee's judgment that looks through the data to identify how to best serve the customer. Instead leveraging predictive and self-learning analytics to find customers at risk of churn and proactively offer personalised offers.

- Companies are focusing on customer experience cloud which is leveraging customer data, digital experience and personalization to manage interactions with customer.
- Customers want to have personalized interaction with brand to build relationship or to solve problems.
- Augmented reality can give customers more realistic idea of an expected experience or helps customer to make better decision for themselves and their family.
- Primary goal of the business is to keep customers happy, there is a need to equip employees with right tools and training to be able to use technology to achieve it

Chatbot

In few cases, a person is better than a machine. But when processing a large amount of data in-real time relating to customer, a machine is simply better at it. Front desk employees can process too little, too late. With the use of artificial intelligence can identify opportunities and experiences relevant for the customer

Chatbots are computer generated programs that use artificial intelligence to initiate and carry on conversations with consumers, to meet their needs, to answer frequently asked questions and to provide customer support after a sale. It can reduce customer wait times and can provide customers with 24/7 service even when customer service representatives are not there to answer incoming queries. Chatbots can be used to engage customers with outbound marketing activities like announce new product, routine follow up messages to ensure customer satisfaction, wishing people on special occasion and offering discount offer to drive sales etc. In the event of issue raised by customer, chatbots can be programed to send directly to concerned person to resolve issues.

Chatbot in marketing strategy

Marketing strategy is a game plan for reaching people and turning them into customers of the product or service. AI technology aids the business in attracting and retaining the customers. Chat bots are one of the machine learning tool enables the business to meet customer expectations. Chatbots other than improving customer service they educate and inform customers. It can deliver mass information at an individual level by integrating with social media, gather data about single person with whom they interact. When user poses an inquiry, it can answer it accurately by offering personalised shopping advice based on purchase history and preferences. It shows larger engagement capacity through proactive approach. By sending automatically welcome notification to customers visiting webpage or social media, it builds interactions with the user. The automation eliminates need for human agents for routine questions and requests. So employees will get more time to focus on those tasks that require human attention. By naturally posing questions in conversations while collecting feedback, the risk of incomplete questionnaire in survey can be reduced to some extent. With right machine learning tools, it can analyse feedback and information it gathers from users and gives insight into what audience exactly wants. Later marketing strategy can be remodelled to focus on customer needs. The various survey analysis shows consumers not interested in emails, text messages and other notifications every time so chatbots capacity to capture, analyse data helps in sending relevant, personalised notification to each and every user. The capacity to make interaction fun by adding humour element creates lasting impression on the user. It can increase the number of visitors by sharing links to blogs, gifs, emojis that is by improving content. Lead nurturing is very essential in generating new customers for the business. Data generated by Chatbots helps gathering information and generating personalized messages thereby marketing efforts can be channelized towards each and every lead.

Challenges in implementation

- Making Affordable Chatbots – Specialist are required to create tailor made to business model and to generate expected end-user interactions.
- Making secure chatbots – As its collects all the personal data of the user throughout the journey of interactions, if security not provided users refuse to use the chatbot.
- User behaviour is controlled by emotions. Feelings are not permanent and mood changes with triggers. Challenge is understanding user expression in messages.
- Users demand for more or best experience, People want to use chatbots that are smart and at par level with human.
- User has limited attention span and often distracted. The challenge is how to hook them and respond in a manner to grab user's attention.

Measures to popularise Chatbots in business

- Chatbot should provide real value to users. It should make lives of the user easy by responding appropriately to the request by identifying as regular or of particular importance.
- Tech devices suffer from tag called 'gimmick'. Ensure people like chatbots by delivering good quality and relevant responses by not becoming over friendly device.
- Provide effective small talk experience as customers or users annoyed of wasting time on unwanted interactions.
- Incorporate methods to review the conversation transcripts, assess their success and make alteration if required to language scripts or functions.
- Ensure user has always access to chatbot conversations as human tendency to close accidentally or bury the window. To overcome this risk embeds the chat window at appropriate place in gadgets.
- In order to reach to their highest potential, chatbots need to be programmed to a level of emotional level in order to understand the problem.

Conclusion

At the outset, by implementing chatbots into marketing strategy it's possible to learn about audience, tailor marketing efforts and reach new customers. While there are technical challenges to be met in specifying script and functions for an enhanced interactions. Based on survey results and expert opinion, assumption can be drawn that chatbots has a capacity to replicate actual human conversation and can be coded to have more intelligent responses to customer queries. It cannot replace completely meaningful human interaction with customer but provide way for engaging with customers, information and suggestions for improving core product and services.

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A Study on Impact of Communication Flow in Channel of Distribution of Lighting LED Industry in Bangalore

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Abstract

Distribution is one of the four essential component of the marketing mix, the other three are product, pricing and promotion. This marketing mix is also discussed and referred as the four Ps of marketing, and'distribution' is here called physical distribution or place. One of the function performed by channel is 'communication'. The study on marketing channel communication comprises the relationships between: (1) standards of information/communication sharing and communication flows of frequency, bi-directionality, and formality, (2) communication flows to wholesalers, retailer and their assessments of the quality of communication and satisfaction level. And based on data collected with a survey made using appropriate statistical tools, to a sample of lighting dealers, our findings offer insight on channels communication to both researchers and to the corporate decision makers. This is to understand the impact of communication flows on summary judgments of communication. Further managers can channelize and focus on communication flows which stimulate positive outcome of business objectives,and which in turn can stimulate for achieving organisational objective. In general optimal utilization of the scarce of resources such as time and manpower in channel of distribution.

Keywords: Communication, Channel of distribution, Formal communication, Quality of communication.

Introduction

Distribution is one of the four essential component of the marketing mix, the other three are product, pricing and promotion. This marketing mix is also discussed and referred as the four Ps of marketing, and'distribution' is here called physical distribution or place. Since, distribution is the process of delivering the products produced or service offered by a firm to the end user,numerous intermediaries are involved in this channel process. The chain of intermediaries which helps in transferring the product or servicing from one to the next before it reaches the end user is called the 'Distribution Chain or Distribution Channel'. Each member in the channel of distribution has a specific role and need which the

marketer caters. Some of the major functions performed by the intermediaries are mainly physical distribution, communication and facilitating function. The communication function performed by the channel members is very vital and it can overwhelming impact the relationship among members of the channel, therefore it should managed in appropriate and diligent manner. Here in this research communication not considered as communication mix, which is within the scope of 'Promotion' marketing mix.

Communication activityis a significant, and prime factor in the development of channel relationshipsand measurement of relationship quality.The general tendency of scholars who tend to take one of two approaches in conceptualizing and defining channelcommunication: either they focus on the flows of communication between channel members orotherwise they focus on evaluative/summary judgments regarding the communication exchange. Some of them strived to examine on the 'nature of communication flows'stereotypicallyinspects things like the frequency ofinteraction, the extent to which communication flows are bidirectional innature, or the level of formality of communication flows. For instance, Brown (1981) establishthe number of communication interactions between channel members over a specified time period, similarly Jakki J Mohr and Ravipreet S Sohi (1995), attempted on quality of communication assessment based on its flow and satisfaction level.

Anderson et al. (1987) reviewed the extent to which both channel members were involvedin the give-and-take of communication interactions (i.e., two-way feedback and participation). Anderson and Weitz (1989) highlighted the quantification of expected communication and how they met. Researchers who have focused on summary, evaluative judgments of communication examine the helpfulness (Guiltinan, Rejab, and Rodgers, 1980), adequacy (Bialaszewski and Giallourakis,1985), or efficacy (Anderson and Narus, 1990) of communication flow. Rather than capturingthe specific nature of communication flows, such asnature and norms of communication, captureda wholeassessment of the quality of communication.This prior research has examined only few aspect of communication flow, without acknowledgingthe potential for multi-dimensional aspects of communication flows on specific industry and versatile geography such as lighting industry in specific and Bangalore metro in general. If communicationis the "glue that holds together the channel of distribution" (Mohr and Nevin, 1990, p.36), it would seem important to include more than one measure of communication flows inchannels research. Further, prior research does not acknowledge that the nature of communicationflows may form the basis for a channel member's evaluative/summary outcome ofcommunication. For example, the formality with which communication procedures are specifiedmight impact the quality of information distributed among, as well as a channel member's satisfactionwith communication. We which examines the impact of communication flows onevaluative/summary judgments of communication would be useful in better managing communicationflows.

Therefore, the purpose of this paper is to test the communicationflows between manufacturers and dealers. More specifically, we examine four issues:

1. To knowrules and procedures of information assimilation and dissemination influence the frequency, bi-directionality, and formality of communicationflows;
2. To knowthese communication flows impact dealers' assessments of the qualityof communication;
3. The relationship between communication quality and dealers' level of satisfactionwith communication.

In the below sections which follow, wefirst review the literature on communications in distribution channels. Prior to developing ourhypotheses, we establish the theoretical underpinnings of our model. Finally, we discussour results, interpret and their implications.

The Statement of Problem

The significant of the communication is un-deniable, which indeed strategized by the research scholar time and again along with business decision makers. This channel of distribution depends on the glue among the various participants in the order. Hence the quality of communication is assessed on individual participant in channel of distribution on various dimension such as norms of information sharing, frequency, formality, bi-directionally etc. There is also vitality of distribution gel within lighting sector in Bangalore, this could have not done without effective'communication'. The focus is on the describing the distribution channel system in such a way that we can adequately capture required evidence on the strategies to be assumed for marketing mix strategies in this said industry for optimising the available resources.

Scope of the Research Work

The study is made within the Bangalore city LED lighting industry primary members of channel of distribution only. This study does not cognize the direct and end consumers perception of quality of communication. Due to distinctiveness and typical nature of lighting LED industry, validation of study lies only on the practical concepts and less relay on theoretical concepts.

This study is not covering the secondary entities such as CFA (clearing and forwarding agents) & CSA (carrying and selling agents) of the lighting led segment in Bangalore city.

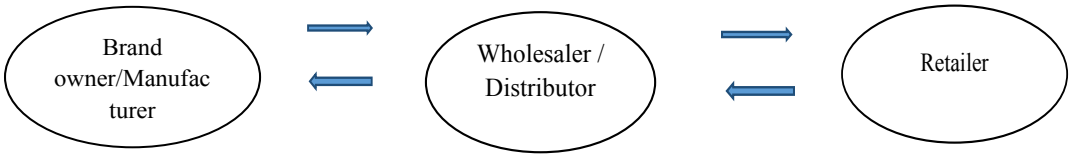
Definition of Distribution Channel

Distribution: one of the components of marketing mix that in simplest task transfer the product from the production place to the purchase place to the customer. In other words the main task of distribution management is placing the goods in hand of potential customers at the right time and place (Roosta, A Venus D Ebrahim)

Distribution channels: A collection of affiliate organizations and individuals that place product or services to end customers. Distribution channels connect the good producers and customer to each other. Intermediaries from the components of the distribution channel.

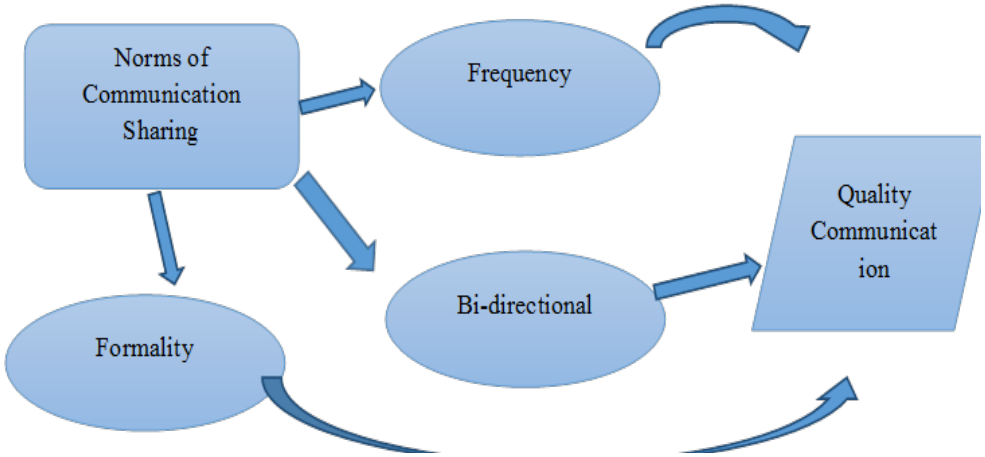
Communication flow identifies the individuals who participate in the flow of information either up or down the channel. It is the one of the important flow in the channel of distribution apart from product flow, negotiation flow, ownership flow, and promotion flow.

Pictorially->



Further to understand the flow of communication, let us understand conceptualize the different dimension of communication (Mohr &Sohi 1995), viz., frequency, bi-directionality and formality. This model so developed to assess the quality of communication flow. The following figure, enumerating the various dimension of the flow of communication.

Figure showing Norms of Information/communication sharing



The above diagram depicts the relationship between the 'Quality of communications', mathematically

f(Cq)=f ,bd, F….

Quality of Communication = frequency, bi-directional, Formality.

Objectives of the study

This paper mainly deals on the quality of communication which is resultant said variables. The focal objective of this paper is to test the communication flows between manufacturers and other intermediaries within channel of distribution. More precisely, we prioritize as below:

- To know the role and its efficiency of rules and procedures of information assimilation and dissemination influence the frequency, bi-directionality, and formality of communication flows;
- To know the relationship between communication quality and dealers' level of satisfaction with communication.
- To know the contemporary channel communication trends in channel of distribution in lighting LED industry in Bangalore.

The below are the hypothesis for the study

1. H0: Norms of information sharing are not positively/negatively related to frequency of communication flow.
   H1: Norms of information sharing are positively related to frequency of communication flow.
2. H0: Norms of information sharing are not positively/negatively related to bi-directionality of communication flow.
   H1: Norms of information sharing are positively related to bi-directionality of communication flow.

Methodology Adopted

Type of research : Empirical research
Sampling design : non-probability method
Data collection tools : questionnaire with 5 point Likert scale

Respondents : intermediaries in lighting LED industry in Bangalore
Sample size : 25intermediaries (distributor, retailer and dealer)
Tools employed : Microsoft excel, PearsonCorrelation Co-efficient.

Interpretation and discussion of findings:

The below are the statistical test conducted for H0, and we have used "Pearson Correlation Coefficient" test with variables. It is to understand the how these variable are related to perceived quality of communication.

The first one is on the impact of communication flow on the frequency of information shared among the channel partners. Here, 'how frequently communication persists among channel members' via face to face, telephonic etc. the x represents "communication flow" from company to wholesaler and retailer. And Y represents "communication flow" to company from wholesaler and retailer. The 5 point Likert scale, from strongly agree to strongly disagree is being utilized.

x	y	xy	X^2	y2
7	6	42	49	36
10	12	120	100	144
4	4	16	16	16
3	2	6	9	4
1	0	0	1	0
25	24	184	175	200

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n(\sum x^2)-(\sum x)^2][n(y^2)-(\sum xy)^2]}}$$

$$r = \frac{5(\sum 184) - (\sum 25)(\sum 24)}{\sqrt{[5(\sum 175)-(\sum 25)^2][5(200)-(\sum 184)^2]}}$$

$r =$ 0.982872, pictorially the trend can be depicted as below in diagram.

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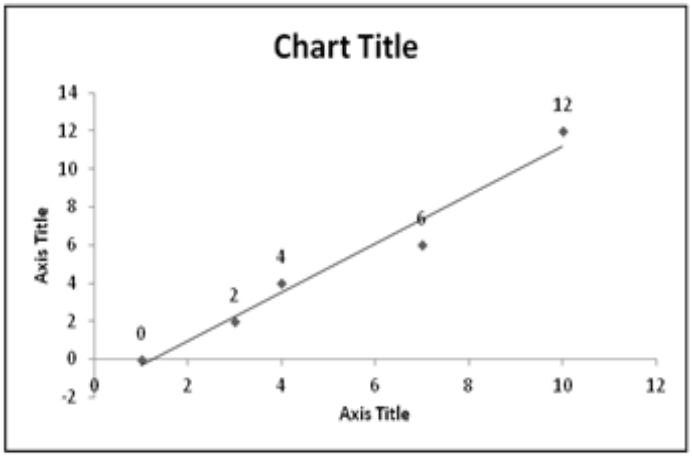


Therefore, there exist positive relationship between the frequency communication from company or manufacturer to wholesaler and retailer vis-à-vis wholesaler and retailer to company. Hence H0 is rejected and H1 is accepted.

Second H0 here, the relationship between channel members communication flow on the bi-directionality is assessed. We populate the data on the erstwhile used statistical test used i.e., Pearson Correlation test.

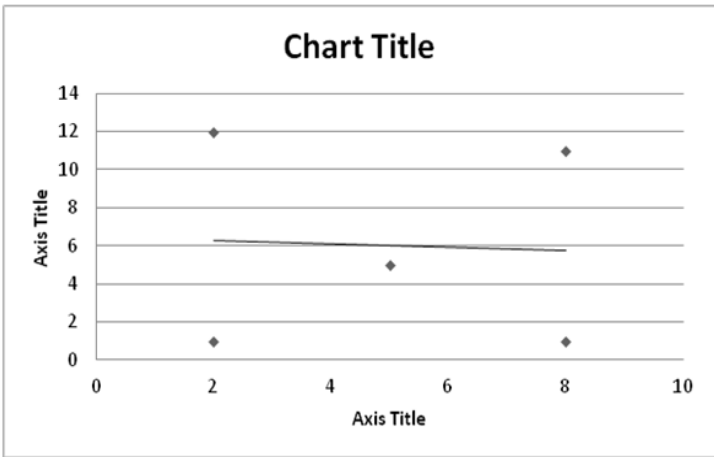
The x represents the 'feedback given by company to wholesaler and retailer' in Likert scale from strongly agree to strongly disagree. And the y represents the 'feedback by retailer wholesaler to company' with same scale

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n(\sum x^2)-(\sum x)^2][n(y^2)-(\sum xy)^2]}}$$

x	y	xy	x^2	y^2
2	12	24	4	144
8	11	88	64	121
5	0	0	25	0
8	1	8	64	1
2	1	2	4	1
25	25	122	161	267

$$r = \frac{5(122) - (25)(25)}{\sqrt{[5(161)-(25)^2][5(25^2)-(267)^2]}}$$

$r = -0.04196$



Thus, we can infer from above test & figure is that the flow of communication bi-directional in the lighting industry is negative. Hence we accept the H0 and reject H1.

Directions for Further Research

Greater understanding of channel communication can help focus managerial efforts on vital communication flows which stimulate positive assessments of communication behaviours, and which stymie less beneficial/detrimental communication behaviours. Furthermore, researchers may better understand which dimensions of communication are more appropriate than others for potential inclusion in their theories and research. There are many findings on specified parameter which are challenging but also new boulevards for further validation can be done on other factors. The specified variables can be utilized to assess the communication flow in other industry and sector.

Conclusion

The present work is an attempt to establish, once again, the positive relationship between communication and effectiveness of the channel of distribution. Since the significant change in the communication pattern in the changing channel of distribution in the lighting LED industry, the underlying the fact is that the communication need to bi-directional and more frequent.

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An Empirical Study on "Security Analysis is a Paramount Phase in Terms of an Artificial Intelligence in 21st Century"

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Abstract

In past & the present scenario Risk & Return are the two equal parallel approaches for every investor. In the competitive global world minimizing Risk & maximizing Return is the prominent challenges to every potential investors. There are several questions in front of the investors like:

- *What to Invest?*
- *How to Invest?*
- *When to Invest?*
- *From where to Invest?*

To claim all these logical & scientific reasoning investors need a feasible platform to identify an advisory support in the lights of an Artificial Intelligence (E-brokerage) who protects, council & guide 24/7 for investors Profit & wealth maximization. The main intention to present this paper is to enrich Artificial Intelligence literacy among the investors group.

Keywords: Personal finance Avenues, Performance Training Tracking Software, Stock simulation websites, Investment Portfolio Tracking websites, Performance Tracking website

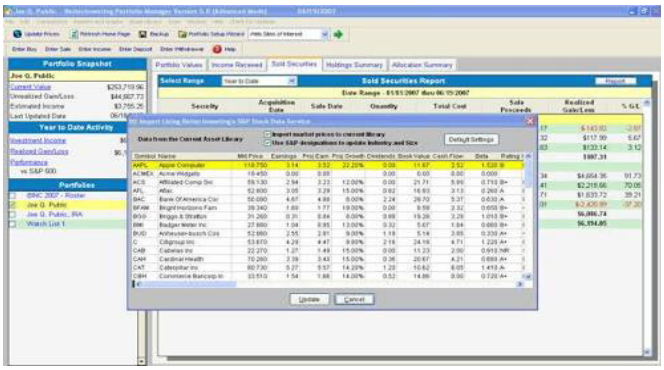
Introduction

Information Technology & Communication is the modern Era in 21st century it's reduces the floor or physical trading system & gives an dynamic platform to E-Trading or paperless transactions. It's managed the time & reduces the physical brokerage & confusion among the investors. Artificial intelligence create a 24/7 financial advisory support through D-Mat process to the investors. It's an instrumental factor that support the investors transactions to make much easier like complete the quires, monitor, clear & helped spurs on its development. It plays an intermediate role for global investment avenue.

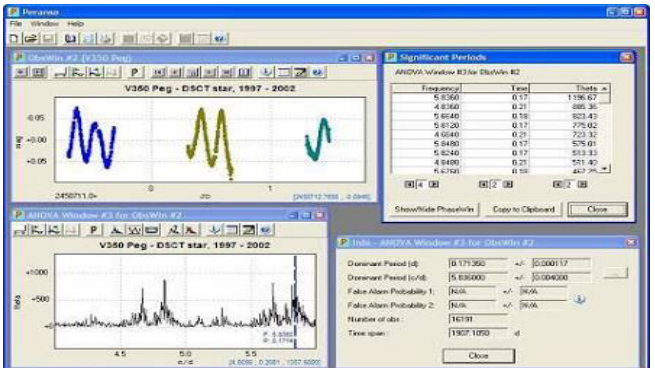
Operational software for security Analysis

Quant IX Software Investment Account Manager: This software is designed in 1985 to analyze single & multiple

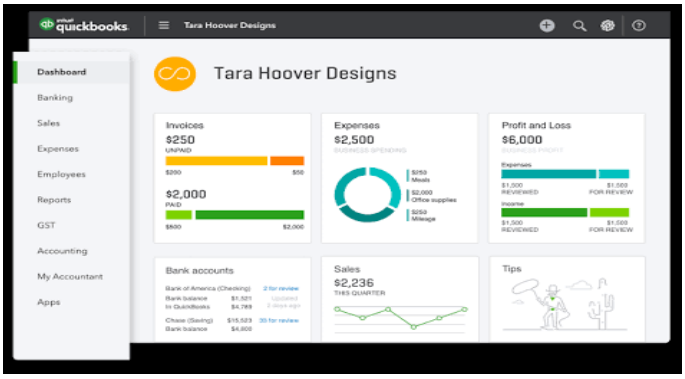
portfolios. It's a centralized portfolio management for stock, bonds, mutual funds, options & Exchange traded funds etc. It's covers Asset Allocations & Diversification, Tax planning etc.



Analyze Now: This software is operate through Microsoft Excel version 97 it covers various calculations like pre & post Retirement planner, Free strategic social security planner, Returns calculators, Budgeting planner, Replacement Budgeting etc. This software is work in a tabular data format & show the results in customized chats.



Intuit's Quicken: It's Accounting software it developed in 1983. It operating system is connected to Ms-Dos, Apple II, Windows, Classic Mac OS, & IOS Android. This software covers most of the North American market requirement. It's tailored based software as per the various requirements in Account. Its covers various market place in some many countries like India, Australia, Germany, Hong Kong etc.



Social Investing Community or Sites

Trademonster.com: it's an online brokerage site. It facilitated to investors for option trading. It's providing information about Equities, Exchange - Trade Funds, fixed income & mutual funds. This site is executed in 15 October 2008 & it was merged into options House in 2014. It gives a place for flexible & customizable trading platform for active stock & option traders. It allows traders to access from anywhere even though mobile phones.

Covestor. com: It's a social investing community that links client portfolio to a real brokerage account. It's an online Investment Management site that allows the client to mirror the real trades. It's launched in June 2007. It's member are located in more than 100 countries & hold position in over 10000, different securities.(Ref. Wall Street journal) over 500 million US dollars in securities are shared through the service & the site has replicated 100 million US dollars worth in trades.

Morningstar.com: it's based on investment research firm that compiles & analyses funds, stock & general market data. It also provides an extensive line of internet, software & print based products for individual investors, financial advisor & institutional clients. This site is a respected reliable source of independent investment analysis for all levels of funds & stock investors, ranging from inexperienced beginners to sophisticated experts. Morningstar filed for an Initial Public Offers (IPo) in May 2005 @ $18.50 per share. The elected members follow an unique method of issuing public shares called Open Initial Public Offers.

SigFig: it's a new Mint - Tracking Investment website. It's a free web app analyze portfolio & delivers personalized recommendations, connecting to financial advisors. The use of SigFig is connecting the brokerage account to the service. One of the most interesting features of SigFig is it's fund & stock advices.

Conclusion

In 21st century Artificial intelligence support is a contemporary requirement for financial Management; it minimizes the geographical boundaries & maximizes Investment Avenue. Artificial intelligence shows a clear projected report card for" Time value of money "& " Wealth maximization".

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An Overview on usage of Artificial Intelligence in Banking Industry

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Abstract

Banking industry is the backbone of the whole economy. Banking definition reveals the main objective of banking industry that is acceptance of deposits and lending of loans to customers. According to world bank report, in India there are 3.5 ATM's and 7 branches for 1,00,000 people government aims to include maximum number of people under the banking umbrella and hence, the government has introduced Jandhan Yojana (zero balance account) type of financial inclusion schemes. Nowadays, banks apart from fulfilling their basic objective of acceptance of deposits and lending of loans, they are into providing certain value added services to the customers such as merchant banking, loan syndication, factoring, smart cards, micro finance, leasing, foreign exchange services, portfolio management and fund transferring services. Online banking system has turned as a boon to the banking industry, where latest technologies with Artificial Intelligence have been implemented successfully."Artificial Intelligence is the theory and development of computer systems able to perform tasks normally requiring human intelligence ".

With the introduction of AI in banking sector risk assessment, financial analysis and portfolio management functions are becoming more effective. Chatbots, AML pattern detection techniques, Algorithmic trading, etc. type of technologies are being used in the above areas. This paper wants to reveal the areas where AI has been invested successfully and the future areas where it can be implemented.

Keywords: Jandhan Yojana (Zero Account Balance), Chat boats, Foreign Exchange, Merchant Banking, AML pattern detection.

Introduction

Banking industry is the backbone of the economy India's banking sector is on a high growth trend with around 3.5 and less than 7 bank branches per 10,00,000 people. According to the World Bank Report. Nowadays, banks apart from fulfilling their basic objective of acceptance of deposits and lending of loans, they are into providing certain value added services to the customer such as merchant banking, loan syndication, factoring, smart cards, leasing, foreign exchange services, portfolio management and fund transferring services. Online banking system has turned as a boon to the banking industry which has minimized the work of staff which is a valuable gift by digital technology. But when the risk factor is concerned people are

hesitating to use online banking system for varied services because of the risk of illegal entrants who tries to hack the precious data, mishandling of funds etc. According to a recent survey 88% of respondent's see AI as a foundational change for risk management. In India, banking sector is becoming one of the first adopters of AI. AI can give assistance in cash transfer, cards management and risk management through various tools like chatbots for customer services for individuals and even placing an AI robot for self service at banks. Even AI can support back office operations and can reduce inefficiency of employees and risks.

Objectives of the Study

- To know the present areas where AI has been implemented in banking sector.
- To know the future areas where AI can be implemented.

Methodology of Research

Whole study is based on empirical data. Information has been collected from secondary source such as journals, articles, blogs from internet.

Review of Literature

- Hamid Eslami Nosratabadi, Ahmad Nadali, and Sanaz pourdrab presented paper on "credit assessment of bank customers by a fuzzy expert system based on rules extracted from association rules". That states credit assessment is a very typical classification problem in data mining.
- R.V Kulkarni, B.L Desai presented paper on "knowledge based system in banking sector". Said that in view of enhanced competition, the banking sector has already taken Strides toward computerization and automate of their operations.

Definition

- Oxford Dictionary defines a bank as "an establishment for custody of money, which it pays out a customers order".
- According to john McCarthy "intelligence is the computational part of the ability to achieve goals in the world".

AI and its Relevance to Banking

Nowadays, technology itself is getting smarter day by day, allowing more and more newer inventions and innovations. For banking sector the application of AI is the most necessitated one. Banking sector is becoming first amongst other industries in implementing AI in its regular and day to day operations. And just like other segments, banks are exploring and implementing the technology in various ways.

1. AML (Anti-money laundering) Pattern Detection: Refers to a set of procedures, laws or regulations designed to stop the practice of generating income through illegal actions. Most of the major banks across the globe are shifting form rule based software system to AI based systems which are more robust and intelligent to the anti money laundering patterns. Over the coming years, these systems are only set to become more accurate and fast with the continuous innovations in the field of AI.

2. Chatbots: Chatbots are AI based automated chat systems which stimulate human chats without any human interventions. They work by identifying the context and emotions in the text chat by the human end user and respond to them with the most appropriate replay. It helps in maintaining customer relationship management at personal level. Human beings can become bored of answering the same type of questions asked by customers but these chatbots attend all the customers without any discrimination.

3. Algorithmic Trading: Plenty of hedge funds across the globe are using high end systems to deploy AI models which learn by taking input from several sources of variation in financial markets and sentiments about the entity to make investment decision on the fly 70% of trading today is actually carried out by automated AI systems.

4. Fraud Detection: This field needs more attention as banking activities are prone to many illegal activities. In the area of fund transfer, ATMs and data transferring channels are getting hacked by intelligent criminals. Falcon fraud assessment system, which is based on a neural network shell work to deployment of sophisticated deep learning based AI systems(Very well planned algorithms are used).

5. Customer Recommendations: Recommendation engines are a key contribution of AI in banking sector. It is based on using the data from the past about users and various offerings from a bank like credit card plans, investment strategies, funds etc. To make the most appropriate recommendation to the user based on their preferences and the users history. In the field of portfolio management this system is very useful.

6. Risk Management: Well customized products can be offered to clients by looking at historical data, CRISIL reports in order to avoid default risks.AI techniques will help to eliminate the human errors from handcrafted models. Suspicious behavior, suspicious emails can be tracked down to prevent customers' interest.

Present Areas where AI has been Implemented Successfully in Banking Sector

SBI

- SBI has installed some scanning cameras in the branch and captures the facial expressions of the customers and immediately reports whether the customer is happy or sad. This is real time feedback.
- SBI has launched SIA as AI powered chat assistant that address customer enquiries instantly and helps them with everyday banking tasks. It can handle multiple questions at a time.

HDFC

- HDFC bank has developed an AI based chatbots, ' EVA'. Eva can assimilate knowledge from thousands of sources and provides simple answer in less than 0.4 seconds.
- HDFC also experimenting with in store robotic application that is IRA (In Store Robotic Assistant) appears to be research and development.

ICICI

- at ICICI bank, software robots have reduced the response time to customer by up to 60% and increased accuracy to 100% thereby improving the banks employees to focus more on value added and customer related functions.

Here software robots will capture and interpret information from systems and do processing and execute multiple activities.

Axis bank

Axis bank has installed Thought factory (TAT) that means previously an employee spend 15 minutes to open a savings account, now it takes 2- 3 minutes. To help reduce the turnaround time (TAT).

Future Areas where AI can be Implemented in Banking Sector

Statistics and predictions say that AI will become an important part of banking industry in future. According to capgemini a robot can perform jobs of 5 employees. Fintech report on India released in 2017 said that global investment in AI application touched $5 billion in 2016.

In future, in order to increase accuracy of transactions reducing the costs. The AI can be used in banking industry another important activity that will become easy to perform with AI is data analytics.

Machine learning can effortlessly process a large amount of data smoothly in future. Customer's service can be enhanced accordingly.

But too much usage of AI in banking Industry can snatch the job opportunities from people and security risk also increases. The biggest challenge is the scarcity of trained human resources; because the existing workforce is not familiar with latest tools and application.

Suggestions

- Proactive efforts will be needed to stay ahead of attackers.
- Advanced technologies can be used to create better work opportunities and also can open the door for work force that can be implementing AI at the enterprise.
- Steps to process a transaction can be reduced in order to reduce the confusions in the minds of users.

Conclusion

Banking industry is the main source for economic activities and which influence the lifestyle of people of every country. As well as it also gets influenced by many factors such as inflation, deflations recessions, booms of the economy of country. It has been proved that the banking officials are always working in the stress environment with too much of workload and hence AI can be considered as a boon to them. Through the usage of AI in banking industry the efficiency of workers will increase to the maximum extent. It will bring the accuracy in the transactions helps in risk free activities through fraud detection techniques etc.

Many analysis also counters job defending technology- pessimists Gartner predicts that AI will not make human employment Obsolete, but it will create 2 million jobs in 2019. If this statement becomes true then the usage of AI will be the most welcoming technology in India.

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Understanding the Scope of Artificial Intelligence and Change in Leadership Goals – A Theoretical Perspective

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Abstract

Artificial Intelligence (AI) is basically the new normal. AI can perform functions that are usually performed by humans such as human-interaction, learning and problem-solving. AI is one of the oldest fields in computer science and it came into picture in around 1950s. This was the time when machines were seen playing chess, answering puzzles and solving algebraic equations.

As machines becomes increasingly capable, the scope of AI in business applications is growing rapidly. Since AI is developed only for purpose of improve, and ultimately replace human intelligence, it is tempting to take AI as a threat to human leadership. As of now, the competitive advantage for humans is that till now there is no such machine which can 100% replace humans. But down the line, in another 10 years, there is no such reason to believe that leadership will be spared by the impact of AI.

Managers should sense big changes as AI becomes integrated into their workflows. The study will analyze the emergence of AI and the changes that AI will bring to core management tasks. The paper gives insights about how managers, in the coming future, will serve as bridges between AI systems and their team members.

Keywords: Artificial Intelligence (AI), Leadership, Management, Humans, Business, Technology.

Introduction

"AI today is pretty cool; AI today is something which can help you out in almost anything. But apparently AI is rising to such an extent that it is mastering almost all the stuffs that humans perform and hence it is making us to witness the scenario in which it will be replacing humans." (Milo Jones - TEDX IE. MADRID)

Milo Jones mentioned the various transformations that AI is bringing to the make the life of the humans easy, frictionless, smooth and smart. AI is making the life better and consistent by bringing improvements and efficiency. He mentioned the pros and cons of AI and discussed the effects of AI on leadership roles. There are various downsides of AI, but basically it depends

on how the AI technology is been used and managed responsibly for efficient development and advances.

"Artificial Intelligence" is the area of computer science which deals with creation of such machines that work and react like humans. It aims to create intelligent machines which serves objectives like planning, problem solving, and reasoning by learning and building its knowledge over the period.

Artificial intelligence can reduce the work pressure on the employees by smoothening the process and handling various routine jobs in a smart and efficient way. It can give a competitive edge over the competitors.

Artificial intelligence is gradually simulating the intelligence that only humans were having at one point of time. It is not only simulating the intelligence, it is developing its own knowledge by initiating common sense, perception, reasoning, and problem-solving abilities.

Research Objectives

Following are the objectives of the study:

1. To find out the emergence of artificial intelligence in core management tasks.
2. To evaluate how AI can revolutionize leadership process.

Research Methodology

The following study uses descriptive research design to analyse the emergence of artificial intelligence and the changes it is going to bring to core management tasks. Secondary data collection method is used for the study. The data has been collected through the articles published over the various online websites, blogs, podcasts, newspapers published by various research organizations and online sources.

Emergence of AI in Core Management Tasks

Technology has become an important part of all the organizations. One can not even think of the business without technology in it. AI has surely revolutionized the way companies were working earlier, and how they are working now. With the extreme advances in the field on AI, it has developed leadership skills like humans. AI now can develop strategies by planning and even can solve problems that are related to humans.

In current scenario, artificial intelligence together with robotics are coming and taking our jobs. Because of the advances in the AI, it is predicted to drive the biggest technology disruption in the workplace since the Industrial Revolution. Its impact is such that in coming future, AI is predicted to take almost 33-50% of the routine tasks performed at present. The prior waves of new technology mainly impacted the workers rather than managers, but now AI has radically started to take on the knowledge work including the core management tasks.

Though artificial intelligence is impacting the traditional work pattern followed in the organizations, but the organizations can achieve their goals in less time as AI offers organizations with great opportunities. Artificial intelligence is helping the managers in automating the complex functions such as data collection and gathering information. It helps the managers in using the data to its fullest and bringing out the important observations out of the data.

Managers spend most of their time in doing the administrative work which is basically the information-based work with some repeated patterns. These administrative jobs can be done very easily by the artificial intelligence because AI can handle data much efficiently when compared to humans. Also, it will reduce the term 'human error' from the context as there will be no human activity interfering the process. So, what about the leaders? What will they do? They can save on

time because of AI and hence can utilize the saved time to spend on interesting companies, projects and new ideas. They can utilize the time do all those works which machines cannot perform. Eventually it will help the businesses to increase their volume and quality.

How Artificial Intelligence can revolutionize the leadership process?

The new artificial intelligence technology knows how to comprehend (understanding the connection and correlation between different patterns), sense (observing and registration of data), act (to assess the impact of various alternatives) and learn (learning from own experiences; more data, better algorithm). This makes the new AI to stand out different from traditional AI concept. This new technology helps the organization in handling the core management tasks.

The very fundamental of leadership is to look out for the welfare of the subordinates and to lead by examples. With the help of artificial intelligence, one can achieve the efficiency among the process of leadership by focusing on the strategies and goal of the organization.

Though the idea of artificial intelligence looks fancy because of the automation that it provides, but still the leadership goals cannot be achieved without the involvement of humans in it. It seems to be a paradox, but as artificial intelligence technology will grow, people will need to grow their skills as well. When AI system starts coming into picture, it would be more of synchronizing the complex machine processes which requires more collaboration with different machines and bodies, which can be done by humans only.

Future managers need to be bilingual as they need to know language of the both the sides. They will need to have a proper leadership skill along with the good knowledge of technology. They should know the uses of various technologies, and the knowledge of how to use it. It cannot be only computers who can run the business, it must be a team of humans and computers.

A good strategy can be a combination of a weak human, machine and a good process. But it can never be a combination of a strong human, machine and an inferior process. Artificial intelligence system is not about replicating the humans, it's about finding the best combinations of what humans are good at and what machines are good at. Machines and humans together can take great decisions.

Benefits of AI in Leadership Process

1.1 Faster Decisions: Using artificial intelligence with the cognitive technologies can help the organisations in making faster decisions and carry out the actions quicker.

1.2 Automation of routine works: One of the massive advantages of artificial intelligence is its potential to complete routine tasks through introducing the automation that will increase productivity.

1.3 Dealing with mundane tasks: AI through intricating automation can even remove boring tasks from the leaders and free them up to be increasingly creative in the management tasks.

1.4 Avoiding errors: The phrase "human errors" was born because human, naturally, makes mistakes from time to time. Computers however, do not make such mistakes – that is, of course, assuming they are programmed properly.

1.5 Taking risks on behalf of humans: With artificial intelligence, you can surely lessen the risks you expose humans to in the name of research. Using AI in this manner can lead to benefits such as demand forecasting, medical diagnosis and oil exploration.

Conclusion

"The future of AI is supporting and augmenting human capabilities such that a human-AI team is stronger than either alone." - Missy Cummings (Director, Humans & Autonomy Lab, Duke University)

Machines and humans together can take great decisions. Both can complement each other but we always tend to think that artificial intelligence leads to automation, and hence it will lead to unemployment. Yes, it seems true, but it is the one of the several scenarios. It will not be the same case always. On one hand AI is leading to unemployment, and on other hand it is creating opportunities for those who are open to accept the changes and are ready to develop skills related to the artificial intelligence science. The managers need to know about their roles and responsibilities and must be confident about that. Although artificial intelligence may reduce the dependency on the manpower but still employers will be requiring efficient manager, skilled workers, and professional to tackle with the system.

The technology has changed the way of working system. The credit goes to artificial intelligence that the world has become smaller and future generation will use advance technologies for the better leadership and better management.

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Risks of Artificial Intelligence in Business Management

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Abstract

One actually cannot deny the buzz and hype of Artificial Intelligence in the field of Science, Education, Business Health care, Transport industries etc. Artificial Intelligence is set to revolutionize the way the business men do their jobs, predict the market, and project themselves.

Artificial Intelligence is both boon and bane to the world of business. The list of benefits is a long one but the list of limitations is longer than that. In the early years when artificial Intelligence was newly introduced to the field of business there was extensive usage in all the functions of the business. Over dependence on technology has given rise to the risk factor. The first thing that usage of Artificial Intelligence leads to is no control over one's own business, the other things that follow are issues like high cost, technological complexity, over transparency, no privacy to the customers, inequality in distribution of wealth, artificial stupidity, no accountability and no human touch.

As researchers we should bear in mind that scale of problems in Artificial Intelligence that can be beyond exponential, our energy source and our ability to observe the world are always finite and thus the result in terms of ordinary human experience are likely less impressive than they sound.

Keywords: Hype, limitations, lack of control, dependence, and complexities.

Introduction

Evolving World of Learning Machines is Artificial Intelligence. Automation and Innovation have very different potential implication for both the future of Human and Business progress. Artificial Intelligence creates a powerful frictional image that serves to both inspire innovation and evoke fear. Narrow Artificial Intelligence can be integrated to produce highly powerful application.

General Artificial Intelligence refers to a machine that is capable of performing the broad array of intellectual tasks of a human. Artificial Intelligence. A logarithms are widely used in all the fields of business and daily life right from managing finance to managing cars.

Computer Systems are becoming Common at work places and have occupied the central place in most of the top businesses, Government Departments, Military Organizations, Health care centers and so on

Business Houses have made extensive use of Artificial Intelligence in their organizations to cope with the unpredictable eventually of an ever changing volatile worlds.

Objective of the Study

1. To list out the Risks of employing Artificial Intelligence in Marketing Management,
2. To list out the Risks of employing Artificial Intelligence in Human Resource Management and
3. To list out the Risks of employing Artificial Intelligence in Finance Management

Analyticial View

Risk is an event or condition that if it occurs has a positive or negative effect on Project Objectives. In this paper we will throw light on the implementation of Artificial Intelligence in department of the Marketing, Human Resource and Finance.

There are 2 common characteristics of Risk in Business

1. Risk represents a future event.
2. The risk has a probability of occurring of greater than 100%.

Management of Marketing, Human Resource and Finance Functions are the major tasks of any kind of Business be it small or Big. Use of Artificial Intelligence in these Departments is due to the it's unique features like

1. Speed of execution.
2. Operational Ability.
3. Accuracy.
4. Error Reduction.
5. Difficult Exploration.
6. Work Efficiency.

Artificial Intelligence in Marketing Management

Artificial Intelligence Marketing is a form of direct marketing leveraging database marketing techniques as well as Artificial Intelligence concept and model such as machine learning and Bayesian Network. It helps in giving Standard Solutions to the Standard Problems.

Major areas where Artificial Intelligence is used are:

a. Product Management namely Search in the areas of new products, branding and packaging;
b. Promotion management namely, sales forecasting, website designing, image positioning;
c. Market and consumer management namely, customer segmentation, predictive customer service and preventing fraud and data breaches

Finding: 1

Modern Marketing Management employs Extensive use of Artificial Intelligence. Marketing Management requires lot of innovation , creativity , pooling of ideas and brainstorming sessions for positive outcome for the company .But now what has happened is Artificial Intelligence is performing all the functions leaving way for the occurrence of the risk factor in the future of the company. Marketing conversation has become a human machine conversation, the essence of the marketing is the conversation between a Business and its customers and potential customers and this has been a marketing tenet for a long time. But it is lost due to AI. Integration Challenges and lack of understanding of the market and sales are also the ill effects of Artificial intelligent.

Marketing hugely depends on Principal of Perception and Reasoning which cannot be done with the help of AI. Al based marketing uses complex set of means and techniques to perform complex functions but this does not help in understanding the complex behavior of its customers.

To perform all the functions of humans and to adapt to the changing business environment Creation of Smart Technologies and, software programs upgrading on regularbasis is required. Artificial Intelligence will not take place of a marketing team because it cannot replace creative thinking as it is just a manmade program and does not have new ideas it can only make variations on the existing program.

Modern Marketers can be advised to take help of Al to do the routine jobs and thus reduce task burden and rather focus on improving the business.

Artificial Intelligence in Human Resource Management

Integration of machines into Work life leading to Automatic Administration is the meaning of Artificial Intelligence in Human resource Management.

The growing importance of all the functions in the Business and in keeping the economy healthy and shining the spot light is on the activities of the Human resource dept.The main objective of the HR manager is to develop a thorough knowledge of corporate culture, plans, and policies, to act as an internal change agent and consultant, to initiate change and act as an expert and facilitator, to actively keep communication lines open, to evolve HR strategies and to diagnose problems and suggest a solution.

The Basic Functions of the HR Dept. is Attract, Engage, Retain and Develop Work Force required for the organization.

In the modern organization Artificial Intelligence is widely involved in Hiring, Engaging and Developing the Humans employed in the organization.

Hiring now a days is done through Professional working Sites and job boards, on line applications system is adopted to gather, screen and manage massive applications. The same technology assists in selection of the Best candidates and eliminate the worst. Artificial Intelligence actually Spots, Screens, and Rank Applications.

Engaging the candidates is technically done through automated e mails or messaging workflows. Along with engaging, re engaging is also done to determine the interest level, work experience or skills the candidate possess.

Retaining the employees is the most important function of the HR dept. Artificial Intelligence helps to perform this function by individual skill management, internal management, and standard Performance Analysis.

Development and Training by employing technology is done by scheduling best time frame and best technique for overall development of the employ which is preparing the work force for the future.

Finding: 2

The idea of Machines replacing Human beings sounds wonderful. It appears to save us from the pain but is it so exciting? Idea like working whole heartedly with sense of Belonging and working with dedication have no existence in the world of artificial intelligence. All the functions related to HR requires human intelligence along with emotional intellectual which guides their feelings and thoughts towards attending work and addressing the issues. BUT this is not the case with machines the intuitive abilities that humans possess the way humans can judge based on previous knowledge the inherent abilities that they have cannot be replicate by machines also the machines lack common sense.

HR Leaders and Practitioners need to have a clear understanding that Hiring, Engaging, Developing and Retaining cannot be done with a Standardized Format. In an organization the employees are varied in nature and different personalized approach is required to manage them for example the same Training Technique and the same Performance Analysis technique will not be suitable for all the employees thus creating problems to Attrition in the organization.

Artificial Intelligence in Financial Management

Artificial Intelligences greatest advances have yet to come but the combination of Big Data with machine learning algorithms has already yields benefit to financial world daily operations Artificial Intelligence is redefining the financial management landscape increasingly financial organization are adapting a machine learning based approach to augment their algorithmic rules based approach towards surveillance and risk management .

This progress in technology is also propelled by the enormous volume of data from customers and market players with the automation as well as digitalization of financial services, Banking, Insurance, and Trading. Data explosion is clearly the key enabler .One can dive into more than 10 years of Banking, insurance Mortgage and Financial Trading history for every single of the million traction that takes place daily.

Artificial Intelligence is Widely used in the Functioning of the Financial Department: Namely

1. Asset Management: AI identifies pattern and indexes via social network and helps in effective Asset Management.
2. Fraud detection: AI uses the data available to construct applicable algorithms to offer insight improve decisions mitigate risk and detect minor to major anomalies to prevent fraud or disasters.
3. Regulatory Compliance: Al helps in recovering layers of documentation or data to meet regulatory policies.
4. Market Data and Research: Al helps to index and select financial data and then supply it in the form of report articles newsletters and even personalized web sites all automated.
5. International Trade: AI helps on web and digital space crawling to map buyers and suppliers data to generate leads for contacting potential clients
6. Virtual Customer Services Assistance: AI improves customer support and counselling by combining Big Data and machine learning.

Finding: 3

AL is relentlessly focusing on being customer centric, improving the operations, cost management, focuses on profitability, Explores new ways of generating alpha and claim management. All the Above mentioned applications of Al are proneto limitations. Financial players should pay more attention to the security, privacy of customer'sdata. Imperfections in AI need to be resolved. Limited availability of right quality and quantity of Data insufficient understanding of Al also leads to losses in the organizations .Over utilization of Al acts as a barrier to the culture of the organization. Proper utilization of Al requires skilled Data Scientists and relevant talent to manage Digital FinancialManagement.

Conclusion

Artificial Intelligence is like a two edge sword it ultimately serves as a tool to achieve maximum efficiency of Business The purpose of Artificial Intelligence is to augment human capabilities instead of completely replacing it. Artificial Intelligence tools compliment HR capabilities but

do not design the structure as that will require strategic human planning and vision. Artificial Intelligent has direct tangible impact on Moral, Motivation and degree of engagement for human resource. Rather than blindly apply Artificial Intelligence to all the areas of management it is advisable to adopt it in jobs which does not involve human thoughtfulness, reasoning, people skills, soft skills, and strategic planning, human instinct for creative solutions.

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A Study on the Impact of Artificial Intelligence on Consumer Decision Making

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Abstract

With the advent in technology and increased competition among various top brands in the market the implementation of Artificial Intelligence (AI) among the retailers has become an important trend. As consumers want to make their purchasing style more simplified and easily accessible, the AIis coming to aid for such consumers. The methodology is based on secondary data collection where the data from various tech journals, articles and through keen observation on the various insights provided by the tech gurus from across the globe. With the use of AI in branding a marketer can better communicate with his customers. The marketer can maintain a good customer relationship management which allows him to retain his customers. The use of AI can lead to better understanding consumer purchasing needs and it makes the consumers more inclined towards the product or service. The study is an attempt to analyse the impact of artificial intelligence on the purchasing decisions of consumers and its effect on retailers.

Keywords: Artificial Intelligence, Consumer Purchasing Decision, Customer Relationship Management, Buying Behaviour, Personalised Marketing.

Introduction

With the advent of technology and a dynamic environment, the rise of Artificial Intelligence (AI) has drastically taken over the world which has made life simpler. The influence of AI system is evident, introducing both opportunities and challenges, which has enabled the integration of future AI advances into economic and social environment. It has become evident that most people today view AI as a robotic concept but it essentially incorporates broader technology ranges that are widely used like from search engines to voice recognition, to learning/gaming structure to object detection. The development of AI has gone far and wide to make human life easier.

Artificial intelligence was formally born in a workshop conducted by IBM at Dartmouth College in 1956. Mc Carthy was the first to coin the term "Artificial Intelligence".

Artificial Intelligence is the intelligence demonstrated by machines, in contrast to the Natural Intelligence displayed by humans and other animals. The term artificial intelligence is applied when a machine mimics 'cognitive' functions that humans associate with other human minds, such as learning and problem solving. Artificial

Intelligence is a consumers best friend, unlike humans robots they are consistent as they are good at tracking and delivering high quality results which save time, money and efforts.

Artificial intelligence has recently found its way into the retail world from conversing with consumers to developing improved management strategies, AI holds a promising future for creating efficient consumer experiences and transforming management system foe retail stores. The most important reason why retailers invest in AI systems is to better understand their consumer need. They also have an advantage over their competitors as they adjust their business to best fit their consumer needs.

AI can guide the customers on their journey with the brand. The self learning components of AI can continuously optimise customer satisfaction. As the marketers expand- either entering new markets or adding new products to existing markets- marketers are testing which of these technologies enable faster and less costly time to market. Not only do the marketers need to keep up with the incredible speed of product development, but need a cheaper way to access riskier markets to justify the investment of expansion into the foreign market. Added to that marketers need to learn how these technologies will provide global customers with the most personalised experience possible.

Review of Literature

- In the lines of Chris Stephenson, Chief Strategist for media agency PHD, he has cited that the rapid development in the AI space in recent years and that these developments would soon flow to consumers. A strong AI would allow computers to learn more new tasks and open up possibilities where computers can help consumers in their purchasing decisions and other practical tasks. (2016)
- As stated by John Callan the main reasons how AI will make a consumer fall for a brand are that the AIs are able to create personalization's that guides consumers, enable them to pick up where they left off and read their cues and preferences effortlessly to give them only information relevant to their needs. (2017)
- According to the study by the Forbes constant connectivity has provided consumers with an infinite amount of choices at their fingertips. 66% of UK smart phone users have thought about purchasing from brand would not have considered but now have inclined towards them because of the availability of information from the AIs.
- As per Andrew Stephens, in his article in the Forbes, he feels that the influx of affordable and accessible advanced data analytics tools, availability of increasingly rich and extensive datasets and growing acceptance among marketers of potential power make marketing decisions. AI helps cut down the decision making time for the marketers making their decisions effective and efficient.
- In the view of Quentin, Ziv and Klaus, in today's era consumers have a wide range of information and avenues to choose from. According to the economic theory, the introduction of AI should help consumers find and chose options that best suit their needs allowing them to lower their search cost, decision making cost, the unpleasant and difficult trade-offs which follows customer choice and increase the utility they derive from their choices.
- According to Mike O'Brien, AI promises to transform the future, but one thing it is doing today is letting brands use it to meet the needs and wants of the customers, to understand them better. These don't just let the retailer understand the consumers wants and needs better but also help the consumers customise their products as per their needs. It is becoming crucial for a marketer to adapt his business to smart mode because AI has become one of the many tools to delivering great customer experience.

- In the view of Christopher Gan, Visit Limsombunchai, Mike Clemes and Amy Weng, the Artificial Neural Networks are considered as a field of AI. It generally involves recognition of the problem and generalisation of problem. Recognition problems include visual applications such as learning to recognize particular words and speak them. Generalization problems include classification and prediction. Over the period, AI has been included in almost all the business helping retailers in analysing consumer choices.

Statement of Problem

The impact of Artificial Intelligence on consumer behaviour and purchasing decisions in the recent times due to advancement of technology and a dynamic environment.

Objectives

1. To know how AI influences consumers purchasing decision/ behaviour
2. To know how AI can change a retailers brand
3. To make consumers and retailers aware of the dynamic environment of brands in relation with technology

Scope of the Study

This study aids to facilitate insights on how the artificial intelligence can impact the consumer purchasing decisions. This study can act as a source of information to various retailers and consumers.

Limitations of the Study

1. Does not involve an in-depth study of AIs impact on the retailers
2. It is only consumer centric
3. Limited to consumers and brand and not concentrating on marketing

Conceptual Presentation

Artificial Intelligence helps retailer build a personalised relationship with his customer. With innovation and creativity along with machine learning, he can understand the needs and wants of the target audience and cater effectively to such demands. The introduction of AI has helped provide better assistance and information to the consumer. A lot of consumer behaviour will change if a marketer incorporates AI in his business. AI can gather more information and answer consumer queries much faster and is available to cater customer needs round the clock unlike human interference where it is time based. It can help a marketer become a monopoly in the market.

The technology is moving so fast that the consumer has more choices at the tip of his fingers and accessible at his own convenience. Earlier it was the media or agencies that controlled what the consumer wanted or what he should have, but now the consumer has control over what he wants to buy or what he wants to watch. AI has lead to customization and provides quick solutions to the problems faced by the consumers. Voice recognition is facilitating searches for various items. Consumers can consult 'robot' assistants 24/7 via messaging apps. AI based brands are increasing in number helping people make smarter choices. The expansion of AI is already helping people keep themselves updated. Automation makes everything easier for the consumer. For example, the autopilot in Tesla, chatbots for automated conversations.

The Impact of Artificial Intelligence on Consumer Behaviour are as follows:

1. **Consumer Perception- Virtual Peronal Assistants**
   The popularity of AI powered Virtual Personal Assistants has boomed in recent years. Millennials are championing the Virtual Personal Assistant movement. Nearly half of this generation agree that AIs are the best technological development to date.
2. **Consumer Aspirations-Robotic (Physical) Personal Assistants**
   A formidable number of the millennials would like an AI robotic assistant to take over at least one routine lifestyle task but the confidence interval between want and trust currently stands at 25%. Tasks that require social and emotional intelligence will remain in the human domain for the foreseeable future with only 9% of the consumers prepared to trust their clothes shopping to AI robotics.
3. **Consumer Emotions- Robotic Friends & Pets**
   Babysitting aside a sizable proportion of Gen Z sees themselves having an AI friend in the future. Pet owners are not adverse to either. 37% of dog owners and 39% cat owners would like a furry AI companion.
4. **Consumer Fears- An Artificially Intelligent Workforce**
   Be it in terms of AI robotics or AI software, consumers fear for their jobs in the advent of technological advancements and over half of them consider their AI replacement could happen very soon. The majority of the millennials believe that AI will replace them due to enhanced speed and accuracy and other are of the belief that their AI replacement will be due to cost savings.
5. **Consumer Experience- Commercial Virtual Assistants**
   Consumers are more open to online AI assistance than telephone AI assistance. A marked percentage do not mind whether the customer service agent is human or machine online as long as they receive accurate and satisfying answers to their queries. As the AIs have already started taking over various brands and retail industries the speed at which its application is adopted by the consumers is remarkable and will continue to rise in the near future.

Findings

As the above spokespersons and the authors have already mentioned that Artificial Intelligence plays a very important in the day to day lives of mankind. With the advent of technology and dynamic environment it has become a necessity for retailers to upgrade themselves with the changing scenarios in order to sustain the fast growing competition and to survive in the long run.

With the use of AI in branding a marketer can better communicate with his consumers and understand their needs and wants better. The marketer can also maintain a good customer relationship management with his consumer which allows him to retain his customers.

Brand managers continuously attempt to gain advantage over a competitors and endeavour to achieve a larger market share and profit for their brand. AI has very much become a part of the consumers life. Customers are influenced largly by the innovative AI and their services which influence the consumers purchase decision.

- Virtual buying assistants, chatbots and voice activated apps are changing the way consumers interact with the brands.
- The future of marketing will look entirely different and brands are taking steps to make this vision a reality.
- The application of AI will reduce the investment made in manpower resources leading to automation which directly leads to automations.
- Brand marketers can identify key influences around the growth area as well as understanding the type of content that is resonating with the followers

- AI helps brand target the right influencers with the right content to increase awareness and diffusion.
- One of the demerit of AI is that they emotionless and need to be supervised by mankind and they are less dynamic.
- It is understood that with the application of AI in brands, has helped the consumer to save time and he can choose from variety of products and also appropriate information is available to them at the finger tips.

Suggestions

1. Although AI has been a very important aspect it has been an important reason for unemployment. The businesses should make sure that they have proportionate number of man power as well as automation.
2. All the brands should start applying AI for better consumer interactions and also for better consumer experience.
3. Without AI a business cannot function in the mere future hence marketers needs to bring in automation to help the business save time and be more effective and efficient.
4. For a business to sustain in the market it needs to be able to sell the product to its consumers and to do so he/she needs to enhance himself with technology and it also helps in consumer retention.

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A Study on Digital Marketing and Its Impact on Customers and Small Scale Retailers with Reference to Artificial Intelligence

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Abstract

India, as the global research and development hub for Manufacturing, has enhanced more and more with digital marketing. We are in a society driven by digital technology, such is its impact that there are countries where citizens don't have running water, but own Smartphone. Digital marketing has an incredible influence on people's interactions, work, purchases and life habits. The objectives of this paper is to study the advancements of digital marketing and its influence on Artificial Intelligence, To understand whether digital marketing aims towards profit generation or customers satisfaction and to understand the impact of small scale retailers on digital marketing concerned with Artificial Intelligences. Therefore digital marketing with the help of Artificial Intelligence makes it easy to rope in customers and also in shaping the modern life of the future.

Hence goes the saying... "Good Marketing Makes the Company Look Smart, Great Marketing Makes the Customers Feel Smart"

- Joe Chernov

Keywords: Advancements, Artificial intelligence Globalisation, Small scale retailers, Revenue generation, Customer satisfaction, Modern life.

Introduction

Digital marketing is the marketing of products or services using digital technology and Artificial Intelligence, mainly on the internet, but also including mobile phones, display advertising and any other digital medium.

The rapid dissemination of information and communication technology (ICT) and particularly the massive adoption of the internet in the past decades have boosted the use of E-commerce as a distribution channel. The growing role of E-commerce resulted in unprecedented structural changes in many industries.

These transformations are already generating a major recognition

in the way some products are manufactured, marketed and purchased, as exemplified by the travel and tourism or media industries. Today business to consumer E-commerce represents only a small segment of total retail in most developed countries but it has been showing impressive growth rates even during the recent economic downturn, auguring a rapid expansion in the years to come.

Objectives

- To Study the advancements of Digital Marketing and its influence on Artificial Intelligence.
- To understand Digital Marketing is aiming towards Profit generation or customer satisfaction.
- To understand the impact of small Scale retailers on Digital Marketing concerned with Artificial Intelligence.

Methodology

Primary Data

Primary data is a original data collected by the investigator for the first time, specially for the purpose in mind andit's also called as first hand data.

Primary data had been collected from 30 respondents of different sectors to find out the impact on customer and Small scale retailers from the usage of Digital Marketing.

Information from Journal Article and Website was taken to provide this Information.

Judgement sampling method used to select the respondents.

Statement of Problem

We can see majority of people using Digital Marketing on regular basis which can be used as a positive aspect for creating the Marketing awareness. But, usually the things are differently used.

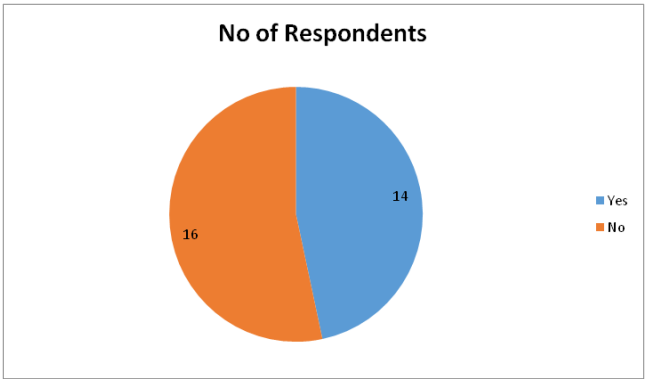
The Digital Marketing and Artificial intelligence is an obstacle for the growth of small scale retailers.

The researcher, have observed to what extent is the Digital Marketing is worth full for customers as well as small scale retailers.

So the study focuses on how the Digital Marketing solves the above said problem.

Analysis and Interpretation

Is Digital Marketing making the small scale retailers Unemployed ?

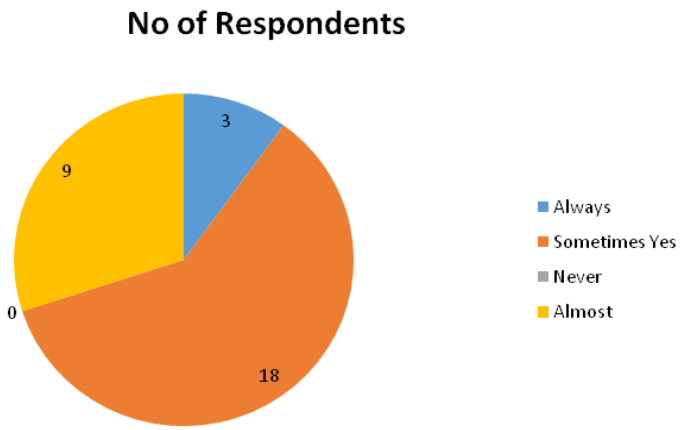


Particulars	No of Respondents	% of Respondents
Yes	14	48%
No	16	52%
Total	**30**	**100%**

Analysis- From the above chart 14 respondents says YES and 16 respondents says NO, Therefore Digital marketing not making small scale retailers unemployed.

Interpretation-From the above analysis 52% of the respondents says that Digital marketing is not making the small scale retailers unemployed. Hence we can conclude that Digital Marketing is not curbing the employment of Small scale retailers.

Do you think Digital Marketing, always provides you with the quality and hygienic products ?

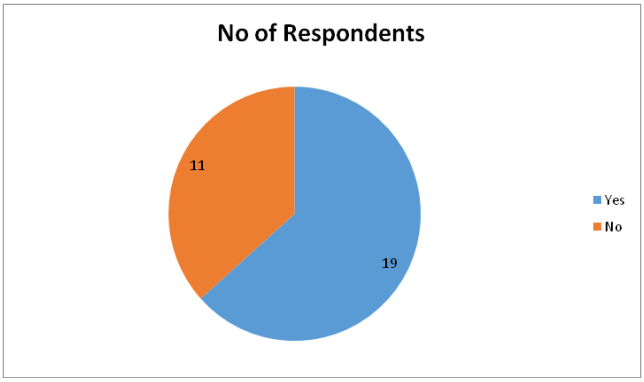


Particulars	No. of Respondents	% of Respondents
Always	3	10%
Somtimes Yes	18	60%
Never	0	0%
Almost	9	30%
100%	**100%**	**100%**

Analysis- From the above chart 9 respondents have said that Digital marketing is providing Quality and Hygienic products whereas 18 respondents says Sometimes YES and 3 completely Agree.

Interpretation-As per the above analysis 60% of the respondents says that Digital marketing provide Quality and Hygienic products, Hence we can conclude that Digital Marketing sometimes provide Quality and Hygienic products.

Is it secured for the customers to shop online ?

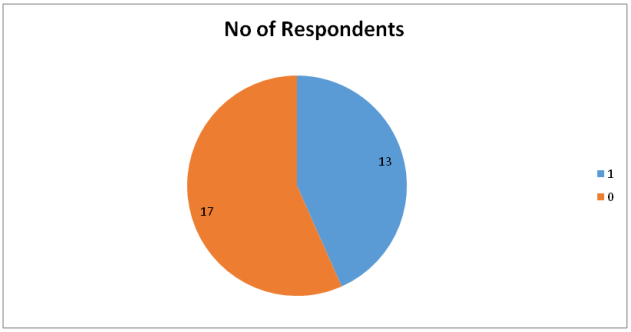


Particulars	No of Respondents	% of Respondents
Yes	19	63%
No	11	37%
Total	**30**	**100%**

Analysis- From the above chart 11 respondents say it is not secured to shop online and rest 19 says its secured.

Interpretation- From the above analysis 63% of the respondents agree about the secureness of the customers to shop online. Therefore to conclude we can say that it is secured for the customers to shop online.

Customers are getting attracted for Digital Marketing only due to its Lavishness

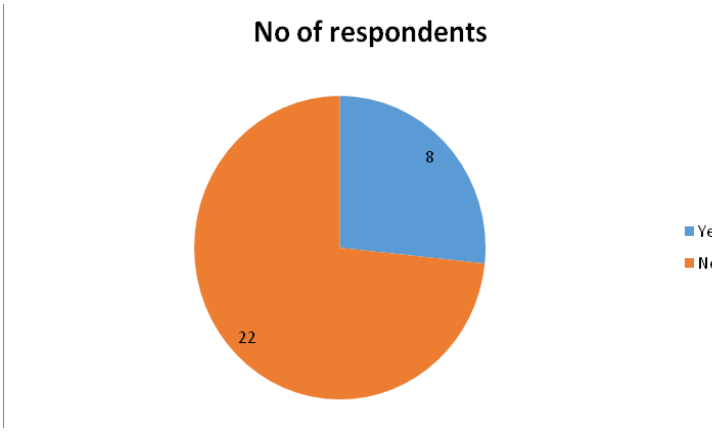


Particulars	No. of Respondents	% of Respondents
True	13	43.30%
False	17	56.70%
Total	**30**	**100%**

Analysis- From the above chart 17 respondents disagree that the customers are getting attracted for digital marketing due to its Lavishness and the rest 13 agrees that they are getting attracted.

Interpretation- From the above analysis 56.70% of the respondents says that the customers are not attracted for digital marketing due to its Lavishness. Therefore to conclude we can say that Customers are not attracted for digital marketing due to its Lavishness.

Digital Marketing mainly has Profit motive ?

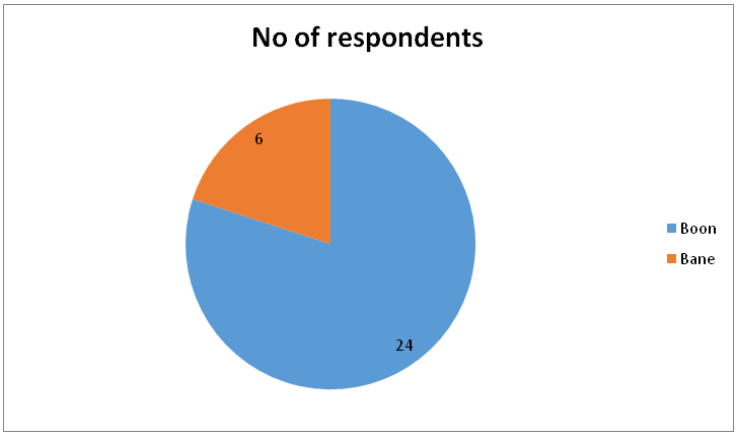


Particulars	No. of Respondents	% of Respondents
Yes	8	26.70%
No	22	73.30%
Total	**30**	**100%**

Analysis- From the above chart 22 respondents disagree that Digital marketing mainly has profit motive and the rest 8 respondents agrees that it mainly has profit motive.

Interpretation- As per the survey 73.30% of the respondents say that Digital marketing does not mainly focus on profit motive. Hence to conclude we can say that the aim or motive of the Digital marketing is not only to earn profit but also providing a better service for its customers.

Is Digital marketing is boon or bane to the customers ?

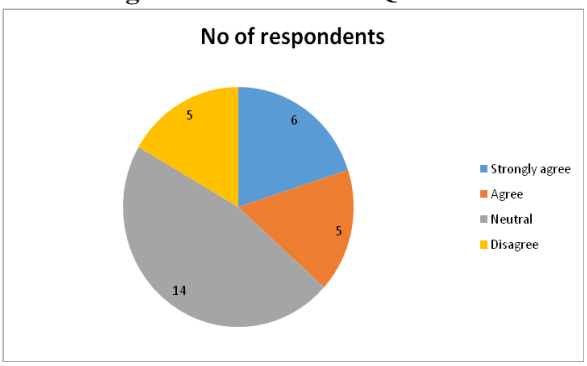


Particulars	No. of Respondents	% of Respondents
Boon	24	80%
Bane	6	20%
Total	**30**	**100%**

Analysis- From the above chart 24 respondents say that digital marketing is Boon for the customers and the rest 6 say that it is Bane.

Interpretation- As per the survey analysis 80% of the respondents says that Digital Marketing is Boon for the customers. Therefore we can say that Digital marketing is Boon for the customers rather than being Bane.

" If your business is not on the internet, Then your business will be out of business" Do you agree with the above Quote ?

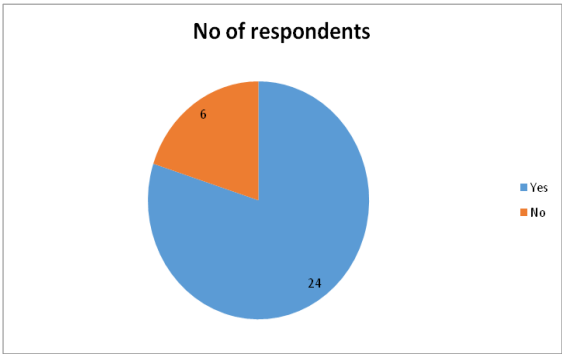


Particulars	No. of Respondents	% of Respondents
Strongly Agree	6	20%
Agree	5	46.70%
Natural	14	46.70%
Disagree	5	16.70%
Total	**30**	**100%**

Analysis- From the above chart 14 respondents says that the Quote is Neutral, 6 respondents strongly agree the Quote, 5 agree and another 5 disagree the Quote.

Interpretation- From the above analysis 46.70% of the respondents say that the quote may be or may not be true. Therefore to conclude we can say that the Quote is Neutral.

Do you think that the customers are manipulated from Digital marketing ?

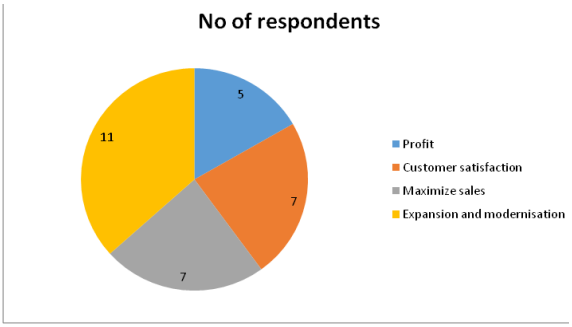


Particulars	No. of Respondents	% of Respondents
Yes	24	80%
No	6	20%
Total	**30**	**100%**

Analysis- The above chart say that 24 respondents agree that the customers are manipulated from Digital Marketing and the rest 6 says No.

Interpretation- From the above analysis 80% of the respondents says that the customers are manipulated from the Digital Marketing. Therefore to conclude we can say that the customers are manipulated from Digital marketing.

What does a retailer focus on, while operating in Digital marketing ?

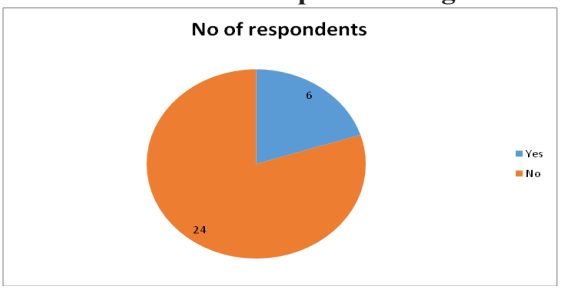


Particulars	No. of Respondents	% of Respondents
Profit	5	16.70%
Customer Satisfaction	7	23.30%
Maximize Sales	7	23.30%
Expamsopm and Modernization	11	36.70%
Total	**30**	**100%**

Analysis- The above chart shows that 11respondents say that the retailer focuses only on Expansion and modernization, 7 respondents says that he focuses on profit, another 7 says that he focus on customer satisfaction and the rest 5 says that he focus only on Profit.

Interpretation- From the survey analysis we can say that the retailer focuses on Expansion and Modernization.

Is success rate of the Brands depends on digital marketing ?



Particulars	No. of Respondents	% of Respondents
Yes	6	20%
No	24	80%
Total	**30**	**100%**

Analysis-The above chart shows that 24 respondents says disagree that the success rate of brands depends on Digital Marketing and rest 6 respondents agree that the success rate of brands depends on the Digital Marketing.

Interpretation- From the survey analysis we can find that 80% of the respondents disagree that the success rate of the brands depends on the digital marketing. Hence to conclude we can say that the success rate of the brands does not depend upon the Digital Marketing.

Findings

From the above conducted survey, we have found the following

- Digital marketing which is enclosed with Artificial Intelligence has lot of advantages and it's a boon to the society.
- Today's customer feel secured to shop online.
- We can say that digital marketing sometimes provides quality and hygienic products, but not always.
- Artificial Intelligence mainly has profit motive.
- Digital marketing is not curbing the employment of small scale retailers.
- Customers are getting are getting attracted for digital marketing due to its lavishness.
- In majority of times customers are manipulated from Artificial Intelligence.
- Retailers focus on expansion and modernisation in digital marketing.
- The success rate of the products and their brands depends on influence of Artificial Intelligence with digital marketing.

Suggestions

- Even though there are various advantages and disadvantages from digital marketing, today's generation feels that it's a boon to society and must be used efficiently.
- Like any other business digital marketing is also a profit oriental business, it is Making customers getting attracted through various forms .But it's not thinking customer's satisfaction.
- Digital marketing may not curve the employment of small scale retailers directly but through the aspect of focusing on expansion and modernisation .Its making their survival difficult.

Conclusions

Digital marketing has an incredible influence on people's interaction, work, purchasesand life habits. The objective of our paper was to study the advancement of digital marketing and its impact on customers as well as small scale retailers. We had conducted the survey from 30respondents, where we found majority of them agree that the digital marketing is worthfull for customers and helpful for the economy. Hence to conclude we can say that "Good marketing makes company look smart….Great marketing makes the customer feel smart."

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Legal Implication of Copyright Protection to Artificial Intelligence and Its Impact on Economic Growth

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Abstract

It is evident that Artificial intelligence is taking over the world and automation is affecting the individual(s) in all segments of commercial world. Under intellectual property rights' law regime, the endeavour of law is to protect the intellectual contribution of humans than anything else. It is a settled view that the skill, labour, judgement are conditional precedent for knowledge creation vis-à-vis its legal protection under various intellectual property protection laws like patent, copyright, trademarks, etc., There is no doubt that humans create machines but the fact that artificial intelligence is taking over the human mind cannot be denied. The machines are on the contrary contributing intellectual creations, which are perfect than human creations. One of the key issues arises for consideration is whether legal protection of such original creations by non-human artificial intelligence needs effective legal protection under IPR legal regime.

This paper seeks to study the problems arising out of intellectual property creation by artificial intelligence and its legal protection as well as legal liability under various laws more specifically intellectual property laws kike copyright law in India. The study is based case laws and including judicial interpretation pertaining to copyright law on non-human intellectual property creations. The author concludes that by providing effective legal protection to the intellectual creations by non-human AI indeed has the impact on the economic development of the Country.

Keywords: Artificial Intelligence (AI), Copyright, Economic Development, Intellectual Property Rights (IPR), DRM, ACL, Justice, Law, Legal Enforcement.

"The rise of the machines is here, but they do not come as conquerors, they come as creators"
- Andres Guadamuz

Introduction

One of the greatest inventions of the 20th century is Computer and Internet and its extensive use has given rise to innumerable and innovative technologies. The conflict between mind and machine has been co-existed along with the dawn of very computer technologies. Over a period of time learning machines have made computer no more a tool and it has gone beyond human expectations. No doubt algorithms and learning machines have not only become

an intrinsic part of human life but have become an ultimate source of creativity, accentuating learning, thinking and economic growth.

The outdated nature of the present Copyright Laws across the globe fails to accentuate the this contemporaneous realism, resulting into release of AI generated works into the public domain, thereby causing great amount of loss to those who invest huge money. This ongoing trend definitely does not, in any way advantageous to the programmers and owners of AI devices, and invariably hinders them to invest resources in the development of AI and hence affects technological and artistic progress of modern society and also affects the access of valuable works by the scholars, researchers, and consumers.

Literature Review: Lawrence Lessig : The author believes each generation has delivered a technology better than the last, the ability of the copyright holder to protect her intellectual property has been weakened. Author points out that the copyright has always been at war with technology however author envisions the belief that intellectual property cannot be protected in cyberspace, is wrong. Kalin Hristov : Author finds that the authorship of copyrightable works has been a 200 years of contentious history in the American legal system. Computer algorithms and learning machines have become a new source of creativity and booming AI has resulted more and more creative works without human intervention, which has accentuating the significance of AI as non-human author. Author points out that the U.S. Copyright Office has denied the copyrights of non-human works and releasing them into the public domain. Author argues that giving authorship to AI programmers and owners is essential to the future development of the AI industry as well as continues promotion of "the progress of science and useful arts". Gönenç Gürkaynak, Ilay Yılmaz, Türker Doygun, and Ekin Ince : Authors points out that the intelligent machine systems are transforming the lives for the better and more the capable machines, the world becomes more efficient and consequently richer. As the neuroscientists are still working on unlocking the secrets of conscious experience, authors argues once we consider machines as entities that can perceive, feel and act, it's not a huge leap to ponder their legal status. On the whole technological progress means better lives for everyone. Artificial intelligence has vast potential, and its responsible implementation is up to us. Andres Guadamuz: argues that the manner in which the law tackles the machine-driven creativity could have far-reaching commercial implications. Though the precise impact on the creative economy is it difficult to ascertain, it well have a chilling effect on investment in automated systems.

Meaning and Scope of Artificial Intelligence

Etymologically the term AI was coined by John McCarthy in 1956 who is considered as the father of AI, defines AI as "the science and engineering of making intelligent machines". AI is not only real but is it pervasive accentuating in all spears of life.

The growing body of works generated by computers includes such as 'a short novel written by a Japanese computer program in 2016 reached the second round of a national literary prize' . 'The Google-owned artificial intelligence (AI) firm, Deep Mind, has created software that can generate music by listening to recordings'. 'Computers writing poems , 'editing photographs' , and 'composing music or generate works in music' , 'journalism' and 'gaming' , and these works could in theory be deemed free of copyright because they are not created by a human author, that apart AI is capable of 'composing art and music, it us also used in information management, Speech recognition, robotics, optimizing logistics, detecting fraud, conducting research, providing translations etc.,'

Legal implications for copyright law: Copyright is a type of IPR protection that helps to protect the intellect of human creation. Copyright law provides exclusive and monopoly right to the creator/author/owner of "original" literary, dramatic, musical, artistic works, cinematograph films.

Creating works using artificial intelligence could have very important implications for copyright law. Legal Definition of Author: Like Hong Kong, Ireland, New Zealand and the UK in india defines "author " in relation to any literary, dramatic, musical or artistic work which is computer-generated, is the person who causes the work to be created. Computer-generated works impetus on the creative input of the programmer, where the machine is used as a mere tool.

Copyright protection to AI works - issues and concerns: Artificial intelligence can produce self-sufficient systems that are capable of learning without human programming, the built-in algorithm allows it to learn from data input, and make dependent of independent decisions. The authorship or ownership under copyright law across the globe is "Human Centric" even in case of anonymous works the law contemplates human identification to attribute the ownership on the original works. Critical issues are who owns AI works, whether copyright protection can extend to non-human AI generated works? and what are the legal and economic implications if the legal protection under copyright law is not extended to AI works?

Non-Human Works and AI – Lawlesslaws

The settled position of law is non-human elements are excused of all legal rights and responsibilities. In Naruto v. Slater one David Slater, a British wildlife photographer, left his camera unattended and an Indonesian monkey named as "Naruto" by "PETA", picked up the camera and clicked amazing selfies, which later went viral on the social media. Gentleman's Quarterly and other magazines sought to feature Naruto in their publications. People for the Ethical Treatment of Animals ("PETA") sued Mr. Slater and his publishers for copyright infringement. But the court dismissed the suit on the ground that Naruto did not own the copyright to the photos. Applying the said judicial principle it is clear that even AI which is a non human like that of Naruto cannot claim copyright to its creative original out put as well as AI or its programmer cannot even claim ownership in the absence of human skill in the creation of original content. This thought process will have a serious ramificaitons on the persons or entities in not employing AI with a huge investmwnrt as they may not reap benefits under copyright law, and even if there ia investmnt, invariably the original work may become part of public domain and initiating legal action against infringement becomes futile exercise.

Legal Personality of Artificial Intelligence

IPR across the world do not provide an effective legal norm with respect to the owning the original content created by AI, AI is born mature and it is real and pervasive as the world is becoming more tech savvy, the day is not far we become more AI dependent, hence there is a absolute need to improve our legal norms to give impetus to new way of original creativity accentuated by AI and treat AI as a legal person like personhood attributed to Idol, Corporate entities etc., in a conventional sense.

Impact of absence of copyright protection to AI

Failure to protect AI could have far-reaching commercial implications, though is it difficult to assess the exact commercial impact, it may have shocking effect on the investment in automation systems. The Automation system Music, gaming and journalism and other works stated above generated by Artificial intelligence are deemed to be free of copyright, as they are created devoid of human author, which is a bad news for the sellers of the said content, it is to be noted even if the content created by AI is DRM protected, still circumvention of DRM of such AI content may not amounts to crime as there is no copyright subsists.

The US , Australia and EU copyright law protects only "the fruits of intellectual labor" that "are founded in the creative powers of the mind" and hence the "content generated with the intervention of a computer could not be protected by copyright because it was not produced by a human". Further that the "copyright only applies to original works, and that originality must reflect the "author's own intellectual creation."

Conclusion with Suggestions

In the absence of proper norms or amendment of existing IPR legal regime to include copyright protection to the content created by AI, may hinder the growth of science and technology promised by the AI. It is to be further appreciated the existing copyright regime in India was amended to include Anti circumvention provisions by virtue of 2012 Copyright Amendment Act by introducing new rules in favor of Digital Rights Management by the owners of the copyrighted works. The said DRM and its breach itself amounts to violation of law and the said acts of its breach without payment of royalty can land up the culprit in jail. The DRM rules across the world has been criticized on the ground that the same limits the access to content unless royalty is paid, which hinders the knowledge growth.

Granting copyright to the person who made the operation of artificial intelligence possible is a practical approach, which ensures continues investment in the technology and gets returns. Considering AI as a legal person is also an option with limitations, which is imperative in view of enhanced computer capabilities, humans are no longer the only source of innovative and creative works. Protection always provides incentive to the creators. It is rightly said that all predictions of steady, exponential growth in computer power have to be duly qualified . Countries like New Zealand, Ireland, South Africa and the UK have decided to give copyright to the person who made possible the creation of procedural automated works , which is a welcome move.

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Impact of AI on Leadership Strategies

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Abstract

With the advent of AI in almost all spheres of the corporate world, there has been a strong influence on all the fundamentals of Organization Behaviour and Human Resources Management. AI is now acting as a triggering force for the refinement of Leaders and their Leadership strategies across all levels. There now exists a demand for paradigm shift in leadership styles across the cross sections of the organization. After realizing the importance of this shift and most importantly adopting this new and pertinent change in the system, organizations are left with little or no choice but to vehemently follow this new ghost named AI.

There have been numerous studies that have been conducted globally assessing the change in leadership styles amongst HR after the dawn of AI. This study focusses on the negative and positive impact that AI has brought about amongst the employees of middle level management in the IT sector. My study also lays emphasis on future business strategies pertaining leadership that the employees will have to adhere to. With a strong belief that impact of AI on leadership whether positive or negative is yet to be debated, yet it has left all the corporate world with many learning opportunities.

Keywords: AI, OB, HRM, Leadership, Middle Management, IT sector.

Introduction

Artificial Intelligence isanother branch of computer science which emphasizes on creating the intellectual machines that works and reacts like humans. Some of the activities artificial intelligence is designed to perform include Speech Recognition, Learning, Planning and problem solving. Artificial intelligence has becomean essential part of the technology by making a global presence and strong impact with the creation of conversational chatbots, self-driving cars, and recommendation systems. Also AI has not only spreaded its wing in Healthcare, Finance, Education or Transportation Industry but the remarkable changes can also be seen in the manner today Human Resource activities are performed. AI is spreading its reputation among business leaders as an emerging asset to the workforce and also transforming the way businesses and societies operate.

In an era where Innovation, Cost Reduction, Improved productivity, Workforce Management has been a continuous

challenge, one particular technology stands out among business leaders which has high potential impact to overcome the challenges with greater efficiency and that is Artificial intelligence (AI). According to the 2018 Future Enterprise survey from Seyfarth Shaw LLP, 62% of the business leaders said that automation and AI would have the biggest impact on their business's operations and processes over the next five years. According to research firm Gartner, AI will eliminate 1.8 million jobs by 2020, but will create 2.3 million more in the same time frame. Others have argued that AI may destroy more jobs than it creates, while 69% of executives in a 2017 Deloitte report said that AI won't kill jobs.

But at the same time we all must understand that AI is going to revolutionise the way next generation business world and leaders are going to work. This thought led a very few thought proving questions - How does AI affect leadership? Is artificial intelligence as a threat to human leadership? At this juncture, its needed to understand that the very purpose of AI is to Augment, Learning, Planning, Improve quality, leading towards ultimately replacing Human Intelligence. And in this regard, there is no reason to believe that AI will not have strong influence on new era of leadership.This study is going to be completely a conceptual study which will explore the impact of AI on leadership with its advantages and disadvantages. To proceed, various Articles and few research papers published on various journals and on international universities websites have been reviewed.

Objectives

1. To study the Impact of AI in leadership strategies.
2. To analyse the positive and Negative impact of AI in Middle Level Management

Need for the Study

Great business leaders are known for their ability and potential to see and visualize what others do not. They take challenges, motivate and inspire their teams to think bigger, better, bolder and perform effectively. Here,Artificial Intelligence (AI) is finally yielding valuable and smart inputs and changing the competitive landscape in several industry followed by the change in leadership style. Hence its been found that there is a need for the in-depth study on how the leadership style is being change and to what extent. This study will address the AI impact on leadership.

Review of Literature

McKinsey Quarterly (2018) shows how the artificial intelligence makes the leadership in the present world. The relationship between ideas and technology in the modern world resulted in the machine learning process which makes the world of better clarity, specificity, and creativity. The study shows how the artificial intelligence reduces the burden of the business organisations to make them more productive in the fields of HR and finance, supply and communication etc. It is believed that robots replace the human resource in the future world however the Artificial Intelligence that powers the future robotic world shall be mastered by the human resource. Such human resource shall have high intelligence and analytical skills. Thus the AI has major role in shaping the future leadership.

According to Laura Cox (2018) focuses on the leadership qualities in the era of Artificial intelligence. The leaders of Artificial intelligence era need to understand the potentials of the people and design the products according to their needs. Understanding the hard and soft technologies will be the mandatory requirement for the leadership in the era of Artificial intelligence. Artificial intelligence will also reduce the traditional hierarchy in the business organisations. This will also narrow down the decisions of the business organisations.

A study conducted by Rohit Talwar, Steve Wells and Alexandra (2017) identifies the leadership challenges in implementing the Artificial Intelligence in workplace. The article also discusses various developmental issues of AI in the future world. Rapid development in AI may decrease the complex roles in the business organisations so that the human resource shall develop the extra-unique qualities to compete with the technological race. Human resource department has greater role in deciding the performance of the working population of the organisation. The article suggests implementing soft skill training programmes to balance between artificial intelligence and the workforce.

According to SasheKanapathi, he recognizes that how job roles can replace humans with robotics. The Article also discusses the various changes happening in world due to the Artificial Intelligence. AI is focused on being prepared for the future change. The entire world turning as a digital world and it emphasis on business and life, competencies plays a major role in leader's career to survive in the new digital world of Industry.

Impact of AI on Leadership Strategies

Leaders to be more Agile

Firstly AI can be a huge aid to the leader whose aim to become more inwardly agile and foster creative approaches to transformation. AI with its fast data processing and high computational ability creates its own empirical feedback loop which will allows the leaders to think and behave as an experimental science lab leading to the tremendous transformation in leadership quality, style and performance improvement. AI as a significant enabler will save a lot of time of new era of leaders by fast processing and consolidation of information. So leaders will have more time to think and work on people Management, creativity and innovation making them more agile.

A Shift in Style

Secondly, Traditional leadership qualities emphasized on strength, decisiveness, ability to motivate, persuade and successfully carry out a plan. Though these personality traits are still valued in leaders today but in the face of Artificial Intelligence, business leadership is undergoing a further shift. The result of which are AI bringing up the fundamental and remarkable changes in new era of leadership qualities and style.It is obviously very likely to happen that AI will supplant many aspects of the "hard" skills of leadership — that is, cognitive processing of facts and information, Fast learning, Planning, Data Computing but at the same time, how AI will supplant the "soft" elements or skills of leadership such as emotional intelligence, the various personality traits, attitudes, and behaviours which makes an individual a LEADER and help others to achieve a common goal or shared purpose, is a matter to think and analyse. We can say that Leaders are definitely going to be leveraged by Artificial Intelligence. But at the same time leaders of the AI age must be in a position to gage the potential of their workforce with greater understanding, empower them, and helps taking out their best performance with high efficiency. And for this the soft element of leadership style or personality traits need to be imbibed in new age leaders and in the manner they work. A famous writer and Philosopher Lancefield explains that the most effective leaders do both and can do both.

Eliminating the Business Hierarchy

As AI gradually taking over the responsibilities traditionally carried out by the leaders, will this effect business hierarchy? Here the famous Author and philosopher Lancefield says that though some of the activities of leaders will be actually carried out by AI but still there will always be a need of figureheads. The task and responsibilities of taking quick decision, task delegation,

motivational talk and discussion to boost their morale, emotional intelligence and many more such needed traits will support the very much existence of figureheads.so AI not going to completely eliminate the business hierarchy but yes digital leaders will have a way through AI to simplify the organisation and cut through the hierarchy to the extent. Too many organisations have too many layers, and too much bureaucracy which can be helped by AI.

Positive Impact of AI on Middle Management Employees

As we all know that Artificial intelligence is transforming the way business world operating. Machines are now performing a wide range of physical and cognitive tasks. And the efficiency, effectiveness and accuracy of business process work is expected to increase as AI systems are advancing through machine learning, big data and increased computational power, impacting greatly on job prospect and talent search at middle level employment.. There has been a common understanding that the advent of new technology might strip many people of their livelihoods. But actually this kind of automation improves not only organisation but society as a whole and raises standard of living. Here are a few following ways on how AI is making anpositive impact.

Find the Best Human Resource

Organization using AI for personnel management, are rapidly adopting advance Technologies and AI to help them find the best candidates for their jobs. Such software often works in one of two ways: spotting the most promising resumes, or widening the net so larger that employers finds more diverse pool of prospective candidates .They are using specific matrices and comparative analysis to cull out candidates who seem to be the most suitable for the job scratching through the endless list to cherry picking the best, AI helps organizations in finding and comparing the rate of efficiencies and potential of different candidates, even before they get hired

Hunting on Employees Emotion Quotient

Artificial intelligence is aiding managers to understand employee's personal aspects of job performance which can help them analyse their level of efficiency. AI analyses employees email, social media and other messages, looking and analysing words, sentences and phrases employees use, leading to the expression for positive or negative sentiment. This helps in supervising individual as well as group morale, Behaviour, values and ethical standards. It also detects any changes in tone or a shift in relationship within the employees or group , eliminating the chances of a p0otential conflict.

Tracking Down Employees Activities

Artificial intelligence can help managers measure the efficiency and productivity of employees by tracking how they handle various aspects of their jobs including their computer activities. The system or software can be encrypted in a manner where it logs everything done on their desktop taking periodic screenshots, saving it for a month ensuring privacy. Then, an artificial intelligence can determine a touch base for company's activities and searches for incongruities contributing to poor productivity. Customers can set activities and thresholds that can trigger an alert and if the software detects anything suspicious, it will send notification to management. This helps out the problematic areas of employees and helping them overcoming it.

Retention of Top Performers on Board

A surprising yet truly possible concept, AI can help predict when employees are planning wind up their career in that particular company - and provides measures and solutions on how to retain

them. The AI system identifies the pattern by own matrices to predict when employees are likely to shift from the job. It considers various factors affecting job satisfaction and calculates a risk score for individual employees. The software also feeds suggestions as a immediate on immediate steps to be taken, helping managers in retaining valuable work force. The retention - risk score is one of the best aid by AI as it helps leaders preventing the loss of potential manpower further leading to increased loyalty and productivity.

Negative Impact of AI on Middle Management Employees

Artificial intelligence and machine learning are controlling the business world at a rapid pace, and there has been a lot of attention to its impact on employment on Middle level Management. Though lot of positive impact has been discussed but we just cannot denied with its negative impact. Its needed to understand that what happens if Machine learning/ AI end up taking jobs from humans and how this will affect the employees and organisation as a whole. Emerging technologies improves the speed, quality, and cost of business and services, but at the same time, it might displace large numbers of human resource at middle level. This possibility challenges the traditional mode of working and benefits of jobs.

Few of the experts disagree and few argue on the size of the impact that automation technologies will have on the employees. Others point out that technology may create new job categories that will employ displaced workers but its still a matter of debate without any surety.

Conclusion

AI − will embrace the future leaders with more advanced and enhanced leadership skills. As discussed above, future leaders will have a lot of AI intervention in analysing data for decision-making, and hence they will get more time in taking care of their people and other creative aspect. Leaders will also have AI's help in monitoring the performance of their people, but at the same time, they must put more effort to uphold the values of the organisation. As of now, we are not seeing AI penetrating much on the softs skills of leadership but as the technologies are advancing, its predicted that the day will come soon. To conclude, the core need for leadership remains as of now AI and machine learning can help create better leaders.

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A Study on Effective Learning Practices of IT Employees at Bengaluru

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Abstract

Learning is considered as an integral part for individual development. In today's environment learning happens from cradle to grave. From the year 1990, Peter Senge (Fifth Discipline) industries (corporate) were gazing at learning as a part for development of workplace and device new ideas for changing customer needs. As far as learning is concerned, there are many forms of learning for knowledge development and reusing in the society for development. There are some kinds of knowledge like tacit knowledge and explicit knowledge, which are used by human beings. Some kinds of learning process can be codified and captured for assessment, but there are certain forms of knowledge that cannot be captured or transformed.

Moreover, Learning has been classified into formal learning and informal learning. Earlier times, formal learning means which is provided in schools and colleges. Now formal learning happens at workplace because of various reasons like technological development and changing customer needs. This study mainly concentrates on the area of corporate or workplace learning. There are many types of learning that happens at the workplace, this particular study focuses mainly on five types of learning that happens at the workplace like Project learning, Peer learning, Research Learning, Incidental Learning and Hands-on learning.

Keywords: IT (information technology), Peer learning, formal learning, Research Learning and informal learning.

Introduction

In current day's Knowledge Economy, Learning happens to be an integral and intrinsic proficiency required by a company that aspires to grow and survive in their specific industry. Keeping in mind, the Competitive advantage and corporate learning, many firms attain sustainability and growth within the current competitive corporate scenario. Corporate learning enables the organizations to reciprocate efficiently and accustom to the uncertain corporate scenario. Organizational Learning is a combination of self-

learning, culture amelioration, constant advancement, innovation and enforces a learning system. Organizations have recognized that learning is also a crucial part of economic growth and hence are plunging money in Competency building programs, start-ups and intrapreneurship.

Objectives

- To identify the current learning practices used in the (IT Industry).
- To investigate on the effectiveness of Learning with different learning methods like Peer Learning, Research learning, Hands on learning, Incidental learning and Project learning.

Literature Review

Cormier-Mac Burnie, et al., (2015) in their research paper show that workplace learning is complex and relational and so is its assessment. Chefs tend to assess the effectiveness of their own workplace learning and that of their subordinates through various means. The dominant measure of effectiveness of learning appears to be linked to the standard paradigm of workplace learning, i.e., the acquisition of knowledge. However, there are also signs that effectiveness of learning is also measured based on the emergent view of workplace learning i.e., that learning is also process as well as product It also seems that feedback plays an important role in the assessment of chefs' learning and that of their subordinates.

Carla Curado (2014) in her paper explores a new idea presenting the possible relationship between organizational learning and organizational design. There is a diversity of concepts, terminologies and definitions reflecting the embryonic state of the theme's theoretical edification; as a consequence, the development of academic studies that bring rigor to a clear relevant subject is needed. But there is still no common language or unifying paradigm that gathers all those researching in organizational knowledge and organizational learning, so there is the necessity to develop a largely accepted vocabulary able to unite researchers. As a consequence, the strategic theory of the knowledge-based view of the firm is confronted with the limitations and criticisms organizational knowledge and organizational learning still arouse.

Raduan Che Rose et al., (2009) in their paper reveals that there is a relationship between organizational learning organizational commitment, job satisfaction and work performance. However, it is apparent that the integrated relationships between these variables have not been found to be reported. Hence, examines the relationship among these variables using a sample of public service managers in Malaysia.

However a report presented in the year **(2008)** to Canadian Association of Prior Learning assessment, presents a detailed work on learning at workplace learning. The study conducted focuses more on work related informal learning. Many models and articles are discussed in relation to adult learning strategies in workplace. The study was undertaken considering all types of work environments at Canada. There is an important point mentioned about how personal characteristics affect the learning practices at workplace. The study concludes by mentioning about development of policy frame works for learning and development at the work environments.

Michael Eraut (2000) study explores concepts in the area of professional workplace learning and deliberates on formal learning and non-formal learning. A tabular format presented in the paper on typology of non-formal learning gives details on implicit learning, reactive learning and deliberative learning and its impact at the work environments. Beyond all, the important point that is being put forth is that memory structures, knowledge acquisition path ways and linking it to performance. There is also a detailed note discussed on Kolb's experiential learning and implicit leaning. The author pens some important point linking tacit knowledge in the professional work environments. The study concludes by putting some concrete points on knowledge acquisition by implicit learning, long term memory, mental schemas, responses, perceptions and norms.

Research Methodology

The present study is included both in exploratory research and descriptive research as it completely focuses on a phenomenon called learning effectiveness, which tries to understand the extent of effectiveness of learning at the work place. The study is completely relying on the primary data. The primary data is collected through structured questionnaire.

Sampling: The sample size taken is 122 respondents. Sampling technique used is convenience sampling. The sample covers IT employees of all ages from many companies at Bengaluru.

Tools used for Analysis: Simple Percentage Analysis, Multiple Correlations and Chi-square tests were used for analyzing the data. The data was fed into IBM SPSS 20 software package for treatment.

Data Analysis and Interpretation

Table 1 Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded	0	0
	Total	**122**	**100.0**

Reliability Statistics

Table 2 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.795	.795	17

The reliability co-efficient is 0.795 the numbers are close to 1. Usually the coefficients should be above 0.7 which are considered as having good internal consistency. Hence the result of the above table (table -2) shows 0.79 is data is reliable.

Demographic Details of the Respondents

Table 3 Profile of the Respondents

Variables	Catagories	No of Respondents	Percentage
Gender	Male	79	65
	Female	43	35
Age	26-30	36	29.5
	31-35	41	33.6
	36-40	26	21.4
	41-45	19	15.5
Monthly Income in Indian Currency (Rs)	51,000-60,000	41	33.6
	61,000-70,000	26	21.3
	71,000-80,000	38	31.1
	81,000 and above	17	14

Education	Graduate	45	36.6
	Post Graduate	56	45.9
	Doctorate	17	13.9
	Others	4	3.6
Marital Status	Married	87	71.3
	Unmarried	35	28.7
No. of Member Earning in the Family	One Member	52	42.6
	Two Members	63	51.6
	Three and more Members	7	5.8

It is evident from the above table (Table 3) demographic details of the respondents that majority of them belong to (79/122) 65 percent are males and the rest 35 (43/122) percent are females. Based on the age classification of the respondents the highest number representation is from 31-35 with 41 and second highest 36 of them belong to the age group of 26-30. The third highest that is 26 of them belong to the age of 36-40. The next category is the income, which is very important as it decides on the capacity and spending of individuals. From the above table it is inferred that income classification almost 33 percent belong to group of Rs 51000-60000 monthly earnings and 31 percent of them belong to the income group of Rs 71000-80000 monthly earnings. The rest of them distributed among Rs 61, 000-70,000 and Rs 81,000 and above.

Chi square Tests Rejected

Table 4 Chi square tests

Variable 1	Variable 2	Chi square Value	P Value	Results
Learning Effectiveness	Project Learning	152.17	.000	Rejected
Learning Effectiveness	Peer Learning	210.02	.000	Rejected
Learning Effectiveness	Research Learning	208.81	.000	Rejected
Learning Effectiveness	Incidental Learning	234.82	.000	Rejected
Learning Effectiveness	Hands on Learning	231.01	.001	Rejected

From the above table it is evident that, there are five variables which was being considered to understand the concept of learning effectiveness. The variables considered includes Project learning, Peer learning, Research Learning, Incidental Learning and Hands-on learning. The hypotheses were formulated and tested with the help of SPSS. The alternate hypothesis were accepted in the all the five cases with the p value of 0.000.

Descriptive Statistics			
	Mean	**Std. Deviation**	**N**
Project Learning	18.0410	1.80173	122
Peer Learning	18.5082	2.15608	122

Research Learning	18.1721	2.32020	122
Incidental Learning	17.2295	2.46559	122
Hands on Learning	16.8033	2.29854	122

Correlations

		Project Learning	Peer Learning	Research Learning	Incidental Learning	Hands on learning
	Pearson Correlation	1	.860**	.402**	.294	.132**
	Sig. (2-tailed)		.000	.000	.001	.148
	N	122	122	122	122	122
Peer Learning	Pearson Correlation	.860**	1	.149	.331**	.129
	Sig. (2-tailed)	.000		.101	.000	.158
	N	122	122	122	122	122
Research Learning	Pearson Correlation	.402**	.149	1	.276**	.202
	Sig. (2-tailed)	.000	.101		.002	.026
	N	122	122	122	122	122
Incidental Learning	Pearson Correlation	.294**	.331**	.276**	1**	.518**
	Sig. (2-tailed)	.001	.000	.002		.000
	N	122	122	122	122	122
Hands-on-Learning	Pearson Correlation	.132	.129	.202*	.518	1
	Sig. (2-tailed)	.148	.158	.026	.000	
	N	122	122	122	122	122

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

As per the above table the correlations factors which is analyzed with all dimensions found to be positive and significant at (1-tailed) and (two tailed). It also shows that the null hypotheses is rejected with all the five dimensions like Project learning, Peer learning , Research Learning, incidental learning and hands on learning. However observing the correlation values it shows high relation in the case of hands on learning.

Discussions

The study presents the five different types of learning that happens at the work environment especially at IT sector. Project Learning, Peer Learning, Research Learning, Incidental learning and Project Learning in the case of these variables the learning effectiveness was tested and the respondents accepted that these kind of learning happens at the workplace and more hands on learning and data also shows close correlation with hands on learning. Moreover learning is a part of assessment of the employees for growth and development. The variables chosen are common modes of learning found in IT sector.

Conclusion

In the year 1990 Senge, Peter published the art and science of learning organization, from then on learning is reiterated in all types of workplaces throughout the world, in order to seek improved work culture and new methods of task performance. The study takes into consideration five variables Project Learning, Peer Learning, Research Learning, Incidental learning and Project Learning. During the data collection the respondent's also reiterated on the point of hands on learning is given more importance at the workplace, which seems to be true as the data reveals the same fact. To conclude the authors would like state that the methods of learning tested, some of them are not included in the appraisal for motivating employees.

Scope for Further Research

This paper mainly focuses on the five variables like Project Learning, Peer Learning, Research Learning, Incidental learning and Project Learning. There are other types of informal learning that happens at the workplace which is not being considered in this study. There is also a bigger scope to capture the other knowledge that has to be codified as a part of formal as well as informal learning. There may be different kinds of learning in other industry sector which is not under the scope of this study.

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A Study on Artificial Intelligence and Neuroscience

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Abstract

This article explores the proposition that the brain, normally seen as an organ of the human body, should be understood as a biologically based form of artificial intelligence, in the course of which the case is made for a new kind of 'humanocentrism'. The human brain is the best example of intelligence known, with unsurpassed ability for complex, real-time interaction with a dynamic world. The Artificial Intelligence researchers trying to emulate its remarkable functionality will benefit by gaining an understanding about neuroscience, and the differences between Natural and Artificial Intelligence. AI has an important role to play in research because Artificial Intelligence focuses on the mechanisms that generate intelligence and cognition. Artificial Intelligence can also benefit from studying the neural mechanisms of cognition, because this research can reveal important information about the nature of intelligence and cognition itself. Hybrids of living neural tissue and robots, called hybrots, allow detailed investigation of neural network mechanisms that may inform the future AI. The field of neuroscience will also benefit tremendously from advances in AI, to deal with their massive knowledge bases and help understand Natural Intelligence.

Keywords: Artificial Intelligence; Natural Intelligence; Neuroscience; Human Cognition; Brain

Introduction

An alien power plant was pulled out in a South American forest. After cleaning and dusting it off, the archeologists flip the switch on, and it still works! Electricity kept flowing in that power plant without needing any sort of fuel. This particular scenario is completely related to the field of AI. Today we have incredibly capable machines which are extremely efficient and intelligent that consumes less than 100 Watts of electricity. Have you ever imagined what would happen if AI became a little less artificial and more brain-like, it might be a step closer to achieving Natural Intelligence (NI). Imagine Artificial Intelligence was as perfect as humans at fields like speech or reading minds in fractions of seconds or the level of problem analyzing and solving.

How do you think humans are so good at interacting with the real world with zero issues? Well, I'd say thank your complex neural

systems that is inside your brain. Those thousands of nerves connected to each and every corner of your body, that makes your life so simple. Now picturize a world where the AI is directed towards our brains. A fusion of the intelligent brain and an intelligent machine would give undoubtedly give you a wonderful output. Don't you think?

The benefits to building Artificial Intelligence of closely examining biological intelligence are two-fold. First, neuroscience i.e., our brain's nervous system provides a rich source of imagination for new types of framework as well as algorithms to the logical and mathematical based methods that are dominating the approaches to AI. Second, neuroscience can practically give the validation and the verification of AI techniques that are already existing. For example, say an algorithm is not reaching the level of expected performance, and we as humans observe the functioning then we are most likely to find a solution to the algorithm and making it work in the given system. But then of course from an engineering point of view, what works is all that matters.

On an average, we could say that artificial intelligence is understood by common men. But not everybody has knowledge on Neuroscience for that matter. To link neuroscience with Artificial Intelligence, it is advisable to take a neuroscience course or read various books related to it. The Society of Neuroscience (SFN) website is a very reliable source for the introductory books, articles and surveys about several neuroscience topics. The SFN consists of over 30,000 neuroscientists who meet up every year and present their latest researches to be up to date.

Objective

The purpose of this study is to show how the future is going to be a new era where the intelligent machines are going to be benefitted by the working of the human brain.

Methodolody

Nature of Study

This study concentrates on the descriptive nature of data only. It presents the secondary form of data collected from different resources.

Secondary Data

The secondary data has been put together from various articles, data from different websites, research papers as well as a few journals.

What do we already know about our brain's nervous system that can benefit the AI?

1. The brain is not a digital computer.
   "The brain-as-digital-computer" metaphor has proven to be popular and usually is carried way too far. Basically, a neuron's potential is compared to the binary scheme of a biological implementation in the AI field. Such misinterpretations of the brain need to be corrected from our thoughts about artificial intelligence. There are crystal clear differences between a computer and a brain.

The differences are as follows

1. **Brains don't have a Central Processing Unit**
   The processing capabilities of a brain are diverse and distributed all over the brain. It does not have or need a 'unit' for processing anything. The brain processes information by interacting with other areas of the nervous system.
2. **No need of Memory Management Systems**
   A computer's memory consists of RAM, hard disks and pendrives which are used to store

information and are said to be efficient too. But a brain activates a region while perceiving or recalling a memory. They involve a fluctuation of the one of the neural membranes. The human brain REMEMBERS concepts unlike the computer intelligence.

3. **Natural Intelligence uses Lots of Sensors**

The major differences between NI and AI is the number of sensors that an animal possess without any requirement of algorithms or codes. The human brain, is extremely good at making the best use of whatever sense data is available. Even blind people without much training or support travel places to places only by paying attention to the sounds around them. AI could actually adopt designs of the working of a human brain to visibly increase strong real-time control on machines.

4. **What we do not know about how the brain works**

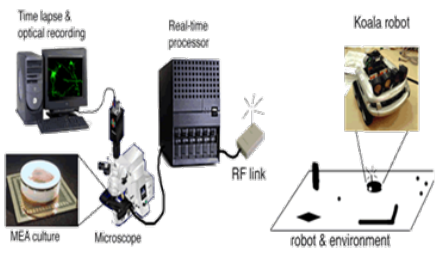
In order to implement NI on AI, there are certain things we must know about how brains work such as:

How do biological networks truly work? The neurons and glial cells both store and process information in a distributed manner. Glial cells provide support to the neurons and give insulation between them. Glial cells are the richest cell types in the central nervous system. According to the neurobiologists, the memory stored are changed in the physical structure of brain cells.

Emerging Tools for Neuroscience

A hybrid robot, commonly termed as hybrots is an artificial intelligence organism in the form of a robot manipulated by the computer which consists of both electronic and biological aspects. Hybrot can also be thought as a "semi-living", a term used by the inventors of hybrots.

Neurally controlled simulated animals are a living neuronal network anatomical twists and dynamics of the real brain functioning. Unlike with those of the real animals, the brain can stay extremely still on the microscope sphere when the body is behaving. To picturize the morphological coordinates of learning while it happens, a custom multiphoton microscope is built.



These living neurons are made on a multi-electrode array (MEA) which is used for recording and simulation of cultured neuronal networks. The hybrid robots are equipped with sensory systems. By learning topics such as embodied cultured networks with tools like MEA, we may also learn some new and interesting aspects of dynamics, memory storage and sensory processing that could be used to take AI one step closer to NI.

A benefit of the hybrot approach is that sensory- motor mappings can be created. Every cultured network including MEA culture shows a robust network phenomenon of short term hiking and unmanageable period : the net's response to the time of two-stimuli is raised when the stimuli are less than 30ms apart, while the response is downcasted if they are 100-500ms apart.

Neuroscience to Artificial Intelligence and Back Again

Artificial neural network that are currently being inspired biologically that are trying to elucidate brain networks are slowly teaming with the experimental neuroscience. The fields of Cognitive Science has made immense progress using theoretical foundations having no basis in neuroscience. Cognitive Science basically means the study of human mind and everything it does. To understand how the brain works, neuroscience and cognitive science are both helpful. I think its time for the world's best technology, Artificial Intelligence to progress in the direction of the brain. This could

also involve PhD programs that combine neuroscience and AI.

In fact both sides, i.e., AI and neuroscience need to travel across the boundary and learn what the other could offer. How can neuroscience benefit from AI?

As we have researched, we now know that the brain is way too complicated for anybody to understand at this point of time. And if it collaborates with AI, new tools and techniques can be discovered to assemble the mass of neuroscience results and come up with better connections and theoretical principles. Once the synergy between AI and neuroscience is increased, more research on neuroscience would inform AI, and better AI could provide neuroscience with tools to interpret the discoveries that they have made.

Conclusion

Artificial Intelligence has taken high leaps in terms of the degree of challenge it can accomplish. But regardless of all the high-performance developments around AI, it still hasn't reached the boundary of super intelligent AI as of now. AI lacks in abilities such as common sense, human intelligence, instincts in general. And what could possibly be better than reproducing human brain to create "intelligence".

AI researchers and experts from across the world firmly agree that the collaboration between AI and neuroscience can construct a perfect understanding of the procedures in the brain that can lead to human cognition.

There cannot be any contradictions on the fact that for Artificial Intelligence to advance and develop beyond its current state, it has to achieve some intelligence as complicated as that of humans. And for that, the AI and neuroscience experts will have to work together to produce magnificent results.

Nevertheless, researchers believe that these challenges would inspire to swim deep into the field and construct lifelong learning systems which is pretty close to what the human brain is.

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Impact of Artificial Intelligence on International Trade

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Abstract

In this research, the economic dimensions of Artificial Intelligence in international trade have been explored. Trade consists of the roles of scale and competition, which is also export and import procedure and documentation. This research includes the key features of AI with respect to these dimensions and explains the features of international trade in respect of AI. The objective of research is to find the impact on exporters and importers due to usage of Artificial Intelligence in International Trade.

The pros and cons of Artificial Intelligence on international trade will also be spotted in this research. A combination of primary and secondary data collection has been used for the research. Besides, how the policies are implemented with respect to research, standards and competition to improve AI in International Trade.

At last, our study will also be helpful in emphasizing that there is still long way to go and much to learn before we have a comprehensive understanding of how Artificial Intelligence will affect international trade.

Keywords : Artificial intelligence, international trade, procedure, documentation and competition.

Inroduction

Artificial intelligence means machine intelligence, is intelligence demonstrated by machines, in contrast to natural intelligence displayed by humans. Artificial intelligence in international trade

Export Import documentation is an important area of international trade. Documentation formalities are required to protect the interest of the buyer and the seller. They are necessary to enable the exporter to get sale value as well as to secure export incentives and the importer to get the contracted goods. The import and export procedure can be eased by the Artificial Intelligence process. And in the same way the documentation can be made easier with the help of Artificial Intelligence. Documentation is the main pillar of the foreign traded. The work of documentation is the most time consuming. Hence in order to reduce the time in documentation process, the government has made some innovative changes related to Artificial Intelligence.

In the new Foreign Trade Policy (FTP) 2015-20, the government has taken various measures under the various provisions of the policy to ease the trade procedure and documentation process. These measures have been taken by the Government in the direction of trade facilitation.

Objectives

- To find that, to what extent government has included artificial intelligence in International trade.
- To find whether exporters and importers find online procedures user friendly or not.
- To get the opinions of exporters and importers on any changes in online procedure of trade and documentation.
- To find whether corruption in trade procedure and documentation still exits after introduction of online technology.

Hypothesis

- H1 - Artificial Intelligence is useful for Exporters and Importers in International Trade.
- H0 - Artificial Intelligence is not useful for Exporters and Importers in International Trade.

Methodology

1.	Sample Size	-	30
2.	Sample Unit	-	Managers
3.	Sampling Technique	-	Convenience Sampling.
4.	Sampling Frame	-	Different parts of India.
5.	Collection of Data	-	Schedule.
6.	Analysis of Data	-	Pie-charts, Bar Graph.

Measures to Simplify the Trade Procedure through Artificial Intelligence

The following measures have been taken by the Central Government through Foreign Trade Policy (FTP) 2015 – 20, in order to simplify the trade procedure through Artificial Intelligence.

1. Consultancy Services by DGFT

Online consultancy services would be provided to various Export promotion council (EPC) and Trade and industry bodies on regular basis by DGFT (Directorate General of Foreign Trade)

2. Nirayat Bandhu Scheme

Niryat Bandhu Scheme has been launched by DGFT for monitoring new and potential exporters on the intricacies of foreign trade. The online helpdesk facility through online chat and live Q&A sessions are available.

Besides IIFT is also running online certificate program in export and import business under Niryat Bandhu Scheme. This scheme was promoted under Digital India and Skill India Program

3. Citizen Charter

An online Citizens Charter have been created by DGFT for giving time schedule for providing various services to clients.

4. Online Compliant Registration And Monitoring System

DGFT, on its website has provided the facility of "EDI Help Desk" accessible for all the

exporters which could help then in assistance of filing online applications. It is also helpful in clarification of any other difficulties or technical problems faced during online filing of applications. For that purpose, DGFT has provided a helpline number 1800 111 55 and e-mail id. – dgftedi@nic.in

5. Online Filing of Applications

The Regional Centres of DGFT have been equipped with hi-speed internet facility under EDI plan of the Government. The importers and exporters can obtain Import Export Code No. and other related documents online. DGFT is the foremost government organization to introduce digital signature which is encrypted to the significant level of 2048 bit. Hence application and payment of fees can also be done online.

6. Online Inter-Ministerial Consultation

All kind of needed documents can also be uploaded online by the exporters and importers. Except few architectural and machine drawings, the exporters need not submit the hard copy of that document, mainly due to its nature. The processing of the applications will also be done online.

7. Enhance EDISystem

An enhanced EDI system has been developed and put into work by DGFT, for the purpose of export facilitation and good governance. This has reduced the physical interface of exporters and importers with the Government Departments and is a significant measure in the direction of reduction of transaction cost.

8. Message Exchange with Community Partner

Customs, Banks, Export Promotion Councils (EPCs) are major community partners of DGFT for message exchange. An effective message exchange system is in place with various community partners.

9. Encouraging Development of Third Party API

The development of Third party API (Application Program Interface) software is being encouraged by DGFT. It will help in integration of multiple users with DGFT through interface.

10. Other E-Governance Initiatives

An online payment gateway has been developed for the payment of application fees under FTP through debit and credit card

Mobile application has also been developed for FTP.

Measures to Simplify Documentation Process Through Artificial Intelligence

In view of, Foreign Trade Policy (2015 – 20), the following measures have been taken by the Central Government in order to simplify the documentation process and make filing of those documents easier by the exporters and importers.

1. Issue of an E– IEC

Importer Exporter Code (IEC) is the most important document for exporters and importers for international trade. DGFT has launched the facility of issuing Importer Exporter Code in

electronic form which is known as "e-IEC". The application for e-EIC can be done online on the portal of DGFT (http//:dgft.gov.in). The documents needed can be uploaded online and the fee payment for the same can also be done online.

2. Issue of E-BRC

One prominent initiative in recent times has been the e-BRC (Electronic Bank Realisation Certificate) project and its successful implementation by DGFT. It has enabled DGFT to capture details of realisation of export proceeds directly from the Banks through secured electronic mode. This has facilitated the implementation of various export promotion schemes without any physical interface with the stake holders.

3. Profile of Importers and Exporters

An electronic procedure has been created to upload various documents in exporter importer profile. Once uploaded, there will be no need to submit these documents / copies of these documents to Regional Authority repeatedly with each application. It intends to reduce the transaction cost and time and is a step towards paperless processing of different applications in DGFT.

4. Reduction In Mandatory Documents

The hardcopy of the documents required compulsorily for export and import have been reduced significantly upto only three documents.

5. Facility to Upload Documents

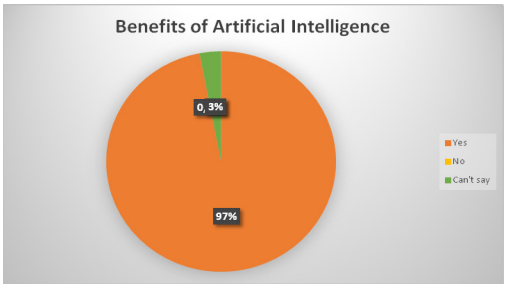
The documents like ANF 3B, ANF 3C, and ANF 3D can be uploaded digitally, duly signed by Chartered Accountant, Company Secretary or Cost Accountant. This is a move towards paperless processing of documents for an efficient and quick system of completion of an Export Order.

6. Other Initiatives

Export obligation Discharge Certificate (EODC) now can be issued online to the exporter. Message exchange system has been developed for information of CIN and DIN with Ministry of Corporate Affair.

Findings and Discussion

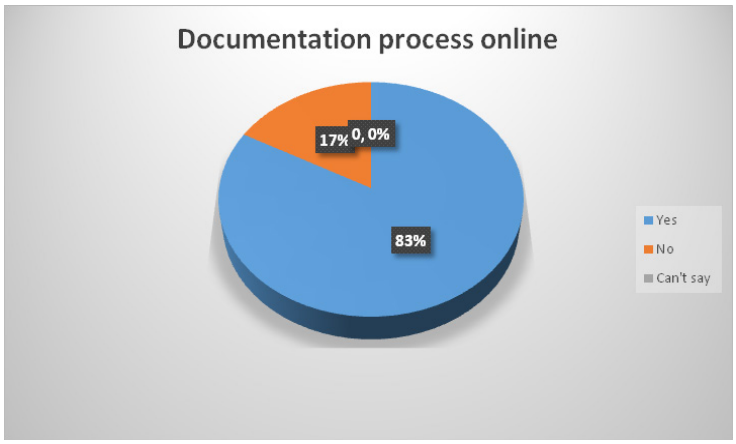
Chart 1.1 Showing the benefits of Artificial intelligence to Exporters and Importer



Inference

The above graph shows whether the Artificial Intelligence is beneficial to Importers and Exporters. 97% of our respondents have responded Yes followed by 3% respondents who didn't had any opinion.

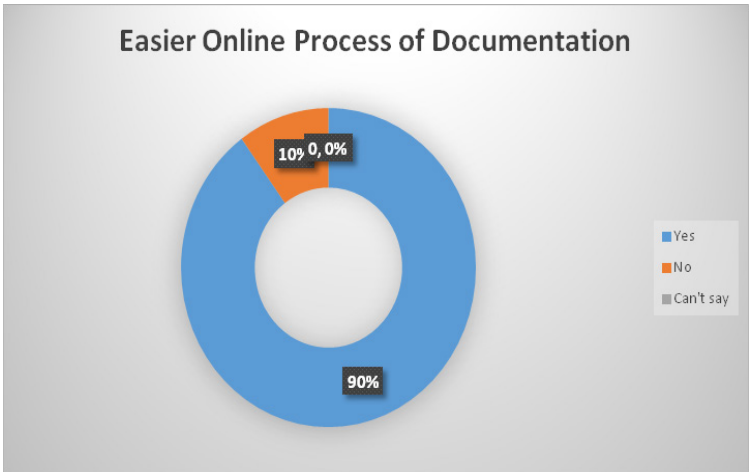
Chart 1.2. Showing the % of exporters and importers doing documentation process online



Inference

The above graph shows whether the respondents are indulged in online documentation process or not. 83% our respondents have responded Yes followed by 17% respondents who have respondent No.

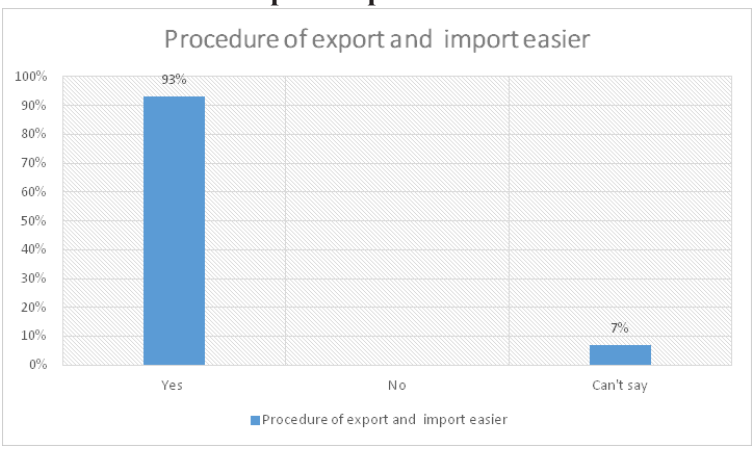
Chart 1.3 Showing the Easiness of Online Process of Documentation



Inference

The above graph shows whether the online procedure of documentation is easier or not. 90% of our respondents have responded yes, followed by 10% respondents who have responded no.

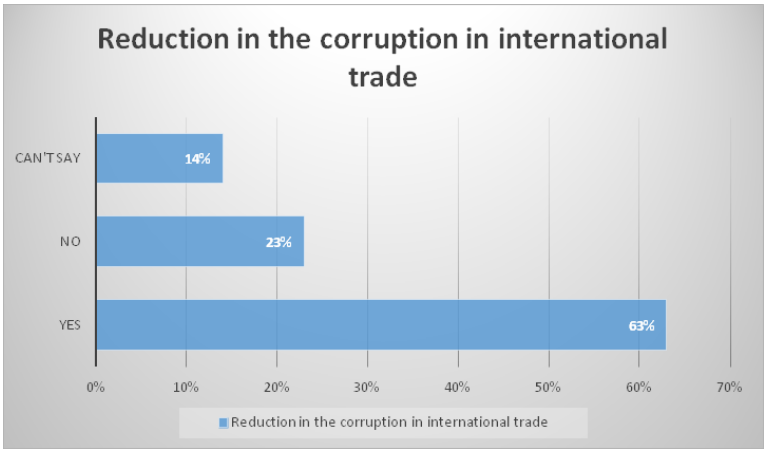
Chart 1.4 Showing the Artificial Intelligence has made the Procedure of Export Import Easier



Inference

The above graph shows whether the online procedure of international trade has become easier or not. 90% of our respondents have responded yes, followed by 10% respondents who have responded no.

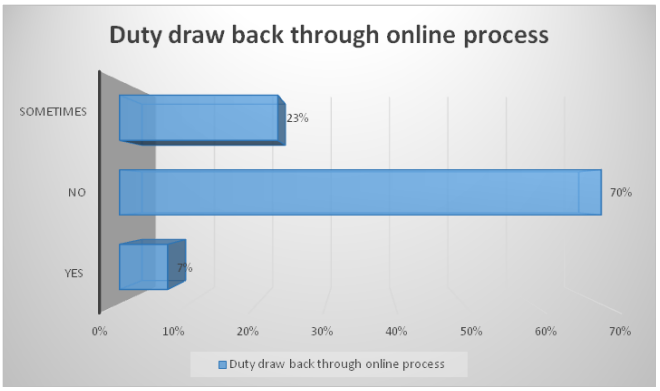
Chart 1.5 - Showing the Online trade Procedure and Documentation in Import and Export has Reduced Corruption in India in the Field of International Trade



Inference

The above graph shows whether the online trade procedure and documentation in import and export has reduced corruption in India in the fields of international trade or not. 63% of our respondents have respondent yes, followed by 23% respondents who have responded no and 14% didn't had any opinion.

Chart 1.5 Showing the duty drawback in time through Online process for Importers and Exporters



Inference

The above graph shows whether the exporters and importers are getting duty draw back on time through online process or not. 7% of our respondent have responded yes, followed by 70% have responded with negative answer and 23% have responded that only sometimes they get the duty drawback in prescribed time.

Suggestions

The artificial intelligence have both advantages and disadvantages. From this research we can suggest that International trade through the online process is overall beneficial and easy, but it should become more easier and user friendly. Proper information should be given to the exporters and importers. And duty draw back to Importers and Exporters through online process in time should be properly given. And the hindrances of corruption still exists wherever human interference is there.

Conclusions

In the International trade the artificial intelligence play an important role in Importing and Exporting. Many of the Importers and Exporters are using online process in the documentation and overall international trade procedures. The trade related documentation and procedure are done through online process but there is a vast scope of improvement in it. It is very useful to the importers and exporters, saves the time, which is a crucial factor in international trade. Hence, the better Artificial Intelligence and giving it's training to the exporters and importers is the only solution to increase the volume of international trade, especially for progressively developing country like India.

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Impact of Artificial Intelligence on Human Resource Management

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Abstract

In our fast moving and constantly changing world, new technologies are being discovered and implemented every day. Among them, Artificial Intelligence is said to be the defining technology of the 21st century. This technology is changing and is being predicted to change all modern industries and businesses forever. Artificial Intelligence is no longer a concept in the near future but is already here in certain capacities.

The purpose of this paper is to show how Artificial Intelligence, when blended along with the existing workforce, will have a beneficial impact on Human Resource Departments. The positive impact of Artificial Intelligence will occur despite the potential challenges and concerns that its implementation may propose, like the fear of job replacement and so on.

Artificial Intelligence will revolutionise and increase the success of current Human Resource practices, reduce administrative burden and assist in the decision making process, finishing tasks in shorter periods of time and at lower costs.

Keywords: Artificial Intelligence, Human Resource Management, Reduction of administrative burden, Recruitment, Job replacement, Benefits of Artificial Intelligence, Challenges of Artificial Intelligence.

Introduction

Artificial Intelligence in simple terms refers to systems that can learn, act and respond in a human like manner. According to John McCarthy, the father of Artificial Intelligence, Artificial Intelligence is the science and engineering of making intelligent machines.

Artificial Intelligence has had a massive impact on our modern world and it is estimated that the market for this technology will only keep growing. From $8 billion in 2016 to $47 billion by 2020. Artificial Intelligence will impact all spheres of our lives as well as that of organisations. Artificial Intelligence is currently being used in marketing, finance, accounting, healthcare, transportation and education, thereby increasing an organisation's productivity and effectiveness.

Although Artificial Intelligence has not yet been implemented in Human Resource Departments on a large scale, with increasing popularity, more international companies are implementing it.

A Timeline of Artificial Intelligence

Artificial Intelligence initially began in the 4th Century BC from myths, stories and rumours of artificial intelligence being endowed by a higher being. John McCarthy who devised the term "Artificial Intelligence" in 1955 is considered the father of this field. In the summer of 1956 on the campus of Dartmouth College, USA, the first Artificial Intelligence conference was attended by many top scientists and researchers. This conference laid the foundation for the field of Artificial Intelligence.

Artificial Intelligence can be divided into three categories: Narrow Artificial Intelligence, General Artificial Intelligence and Super-Intelligent Artificial Intelligence. At present we are still at the Narrow Stage of Artificial Intelligence where it is only being used for routine jobs and repetitive tasks that lack creativity. General Artificial Intelligence is the stage where Artificial Intelligence reaches a human level of thinking, innovating and sharing ideas. At the Super Intelligent Artificial Intelligence level they become smarter than the best human brains in the world.

At present Artificial Intelligence is currently being implemented in our lives, sometimes when we would least expect it. We could be interacting with Artificial Intelligence, like chat-bots on sites. The Future of Artificial Intelligence in the Human Resource Department is bright and can have many pros as well as cons for an organisation.

Benefits of Artificial Intelligence

Reduction of Time and Cost

Artificial intelligence has been and is changing the shape of the existing workplaces by drastically reducing time and cost factors incurred by an organisations Human Resource Department and has been shown to boost the company's revenue by 26 percentage. Artificial Intelligence can not only process data of repetitive tasks like scheduling interviews and screening of resumes much faster than a human being but can also find potential candidates that were overlooked by humans during the selection process.

Goldman Sachs has been one of those companies to have been successful in the use of Artificial Intelligence in the workplace, claiming this move will provide more time for the employees to focus on other task as well as spend time with clients.

Interview and Recruitment

Artificial Intelligence uses various complex algorithms called chat-bots which are programme based on the company's expectations of an ideal candidate, these bots look to ensure that the right employees are hired, as well as the current employees are retained and their needs are met.

With the correct balance of Artificial Intelligence along with human resource professionals an organisation can reduce the average screening time of interviews by leaps and bounds and enable them to make better solutions of the potential and interested employees, rather than if just a human resource professional would do by themselves.

During the initial interview process of employees a manager may be susceptible to various unconscious biases and can gravitate towards candidates similar to the interviewer and so on; Artificial Intelligence will help eliminate these biases and ensure a more diversity in the organisation and a transparent selection process.

Artificial intelligence is also being used to help in the identification of soft skills of potential talent. This is done through the assessment of specific signs and patterns that may be displayed by the candidate during the screening process. However these are not absolute solutions as identification of soft skills require a human touch to it as well.

Mya is an example of an Artificial Intelligence chat-bot being used in the recruitment process.

Mya has been made and developed by a company called FirstJob. Mya communicates and relates with potential talent shortlisting them according the organisation's expectations, thereby reducing the time of the recruitment process by 75% as compared to the time taken by human counterparts.

Artificial Intelligence can also be paired along with Augmented Reality which can allow potential candidates or trainees to experience and get a feel of the organisation, the interview process and so on even, before they are formally in the organisation.

Challenges to Implementation

Job Replacement

One of the biggest challenges of the employment of Artificial intelligence to the field of Human resource Management is that it will end up replacing some of the jobs held by humans. These jobs that will be replaced are lower skilled and repetitive jobs that don't require a strong emotional capability. While many people fear this shift of jobs, Artificial Intelligence will also create newer jobs and will probably not be able to replace jobs that are on a creative level requiring more intuition. Similarly with the advent of the Industrial Revolution where jobs were replaced by much more efficient machines, human beings still found jobs that this new discovery had uncovered.

Expensive to Implement

However to implement Artificial Intelligence in the Human Resource department is not as easy as it sounds and can prove to be an expensive process; therefore only a few companies have the luxury of being able to use it effectively. It is estimated that presently only 40% of international organisations are using Artificial Intelligence to aid in the recruitment process.

Fear and Lack of Awareness

It is noticed that people tend to be more forgiving of a human being when a mistake is made but are harsh towards a machine that does the same. People need to learn to trust Artificial Intelligence so as to allow it a chance to be effectively integrated into the Human Resource Department of the organisation. Another worrying point for people in the case of Artificial Intelligence is that security issues could occur which could harm an organisation or an individual's privacy. For example, news of Google and Facebook allegedly shutting down their Artificial Intelligence programmes after they started to develop their own languages that even the experts were not able to decipher even with the help of technology, have only made people more scared of the possibilities of Artificial Intelligence becoming self-aware and posing a threat to humans.

Human Judgement

Without both humans and artificial intelligence working in unison at the recruitment process there is a possibility of missing the unique features a particular individual proposes that would make him/her ideal for the job. Therefore Artificial Intelligence should be used to reduce the number of applications for recruitment to only the ones that fall under the pre-determined criteria of the organisation; Artificial Intelligence cannot completely replace human touch in the screening process.

Requires Data and Past Experiences

As Artificial Intelligence learns through previous experiences and from various sources of data, it will entail a lot of data collection which is a long process in order to get the desired results.

Conclusion

Since the beginning of time human societies have been encountering changes in all the technologies that were in use. Just like the new upcoming technologies and the ones that were introduced before, so also should we embrace this upcoming field, to help increase the productivity and profitability of organisations. With the introduction of every technology, it opens up an avenue of both pros and cons.

Since Artificial Intelligence is increasing in popularity it is an organisation's responsibility to embrace the changes and look towards what the future of Artificial Intelligence may bring. In conclusion, Artificial Intelligence will not replace all the jobs being held by us humans; and only when it is blended along with the existing human tasks can the Human Resource Department operate at its optimum efficiency.

We must remember Artificial Intelligence is not a matter of human versus machines; it is humans and machines overcoming difficulties and challenges that an organisation encounters.

Artificial Intelligence: With Special References to IT (Information Technology) Sector of Bangalore

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Abstract

Artificial intelligence is an integrated and multidisciplinary faces of the present scenario of the business process. It basically automates and interconnects the business processes that have implication for customers, firms, and other stakeholders. In the current competitive world the artificial intelligence has become the primary need of the business organizations, because, it has been revolutionary form of business process which is replacing the human intelligence through saving the time and cost, increasing productivity and efficiency and also the assured quality of work. The study focuses on the role of artificial intelligence in Bangalore IT sector which is called as the IT capital of India. The paper describes impact of artificial intelligence on the employees of the IT sector. The research also makes an attempt to drag out the key skills to be acquired by the IT employees in order to compete with the artificial intelligence.

Keywords: Artificial intelligence, automated process, Replacing, IT sector, Impact, key skills.

Introduction

AI is an area of computer science that emphasizes the creation of intelligent machines which work and react like humans. IT sector is one of the fastest developing industries in the world by adopting AI in its work force. This technological revolution has made the companies to look for improvement and bring in more innovation and efficiency in their operations. The IT sector in India consists of two major components.

- IT services
- BPO

The sector has increased its contribution to India's GDP from 1.2% in 1998 to 7.7% in 2017. According to the industrial experts and NASSCOM (National Association of Software and Service Company), Indian IT work force will touch 30 million by 2020. Bangalore is one of the cities i.e. doing prominently well in the field of IT by adopting AI in its work force. It accounts to 25% of IT investments in India and employed more than 750000 IT professionals. So, it is called as the IT hub of India.

Review of Literature

Avneet Pannu, M. Tech Student, "ARTIFICIAL INTELLIGENCE AND ITS APPLICATION IN DIFFERENT AREAS". ISSN: 2277-3754 ISO 9001:2008 Certified International Journal of Engineering and Innovative Technology (IJEIT) Volume 4, Issue 10, April 2015. The area employing the technology of artificial intelligence has seen an increase in the quality and efficiency. This paper speaks about the technology and its application areas. The study also focuses on the use of artificial intelligence in the power system stabilizes, and in the medical field, and as well as in accounting databases. The artificial intelligence gives the ability to the machines to think analytically, using concepts. Artificial intelligence has contributed tremendously to the various fields from the past two decades, and will continue to do the same. This paper has focused mainly on artificial intelligence used in the field of power system stabilizers (PSS), and it describes how the artificial intelligence techniques are used in computers games to solve the common problems, and to provide the games with more feature and as well as fun, and the researcher tells that there is bright feature in the analysis of network intrusion detection and there is also definite feature in the area of power system stabilizers (PSS).

Reshmi Banerjee, Assistant Professor, Department of Electrical Engineering, Guru Nanak Institute of Technology, Kolkata, India. "INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN ELECTRICAL, ELECTRONICS, INSTRUMENTATION AND CONTROL ENGINEERING". Vol. 3, Issue 7, July 2015 Copyright to IJIREEICE DOI 10.17148/IJIREEICE.2015.3717, 86. Artificial intelligence is the science of automating intelligent behaviors which are achievable by humans, over the past decades the power system as grown in its size and complicity consisting of generators, transmission lines, power transformers, distribution transformers etc. The acquisition and processing of data for the use of operators and control of devices are the main building blocks of all utility control system. Though the manual calculations, technical analysis are first adopted by the power system design operation and control, as the time passed they became more complex due to the technical advancements. Today's modern society needs continuous, and uninterrupted supply of electricity for the smooth functioning of the society, because the power system determines the growth and values of the society, so the researcher tells implementation of artificial intelligence is very important in power system.

Jochen RenzIn, Research School of Computer Science The Australian National University jochen.renz@anu.edu.au "AIBIRDS: THE ANGRY BIRDS ARTIFICIAL INTELLIGENCE COMPETITION". The Angry Birds AI Competition (aibirds.org) has been held in conjunction with the AI 2012, IJCAI 2013 and ECAI 2014 conferences and will be held again at the IJCAI 2015 conference. In this paper of AIBIRDS, Jochen RenzIn describes the difficulties and challenges of artificial intelligence and why it is important bring in artificial intelligence that react with the real world, and the research emphasizes on past competition and describes which method were successful. The basic angry bird artificial intelligence game was developed with the intent of teaching kids about artificial intelligence and programming in a playful way which helps them to become more creative and skilful. They are planning to conduct a competition for Scholl children based on AIBIRDS snap implementation. At the upcoming competition at IJCAI 2015, they plan to have a new competitive track where two agents try to solve game levels with alternating shots. At the beginning the two agents each submit a concealed offer as to how many points they are willing to pay for the right of the first shot. The agent with the higher offer starts and the agent with the winning shot get all the points of the level. If the agent with the higher offer wins the level, the offered points are paid to the other agent. This competitive variant is easily possible with a small modification to the client/server communication protocol. The aim is to encourage agents to analyze game levels and to evaluate actions in advance rather than winning by a lucky shot. In addition it could make the competition interesting for game theory researchers.

Statement of Problem

An investigation found that the revolution in the field of AI may replace humans, machines may takeover human jobs, and also the study tells that by 2020, 85% of the customers relationships will be done by AI. Like attending calls, mailing, etc. which is a worried factor among the clients

Objectives

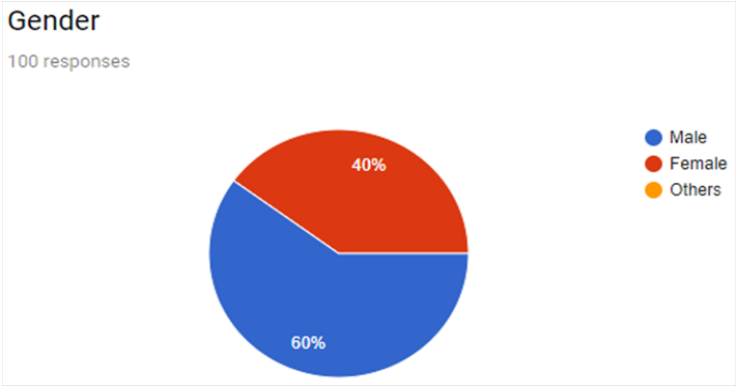
- Role of Artificial Intelligence in IT hub.
- Impact of AI on employees of IT sector.
- The key skills need to be adopted by the IT employees to compete with the standard of AI.

Methodology

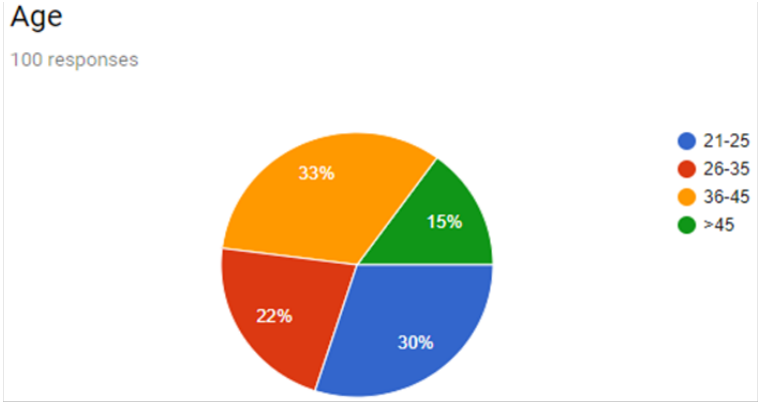
In this paper, for the first objective the secondary data has been used to find the relevant information and facts. For the second and third objectives primary data has been used, which were collected through the questionnaire method among the sample group of IT employees in Bangalore.

The basic statistical tools were used wherever required. Deferent charts were used for interpretation.

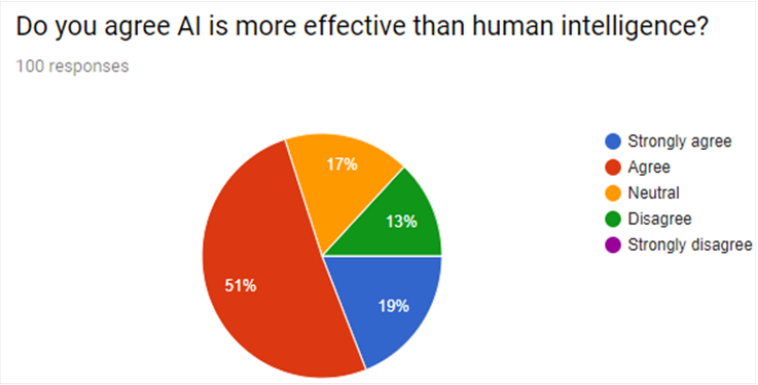
Interpretation



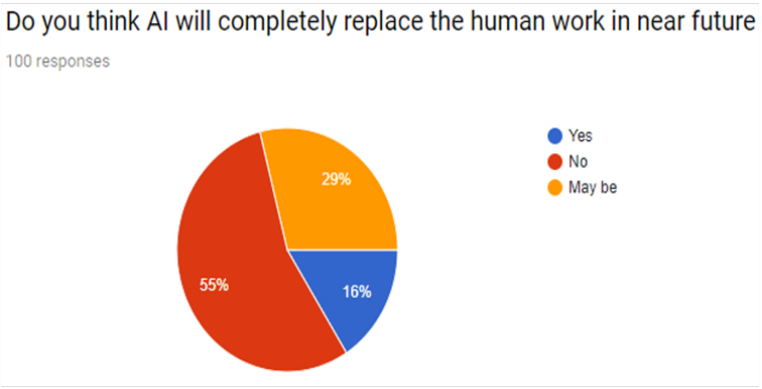
Among the IT professionals who responded to this survey 60% are men and 40% are women.



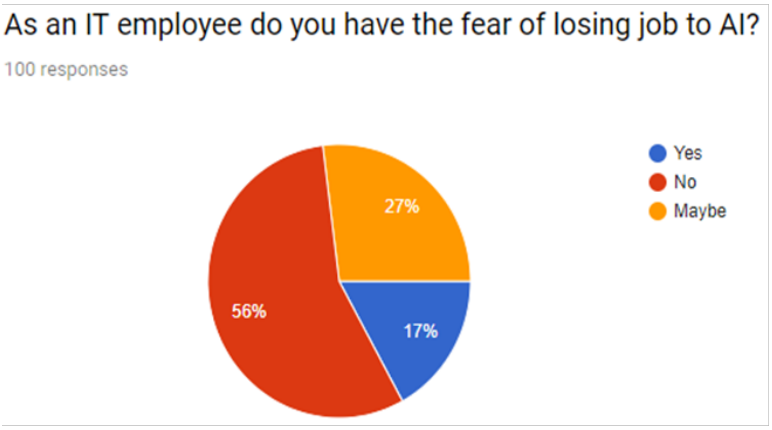
The majority of the people who responded to this survey belong to the age group between 36-45 years.



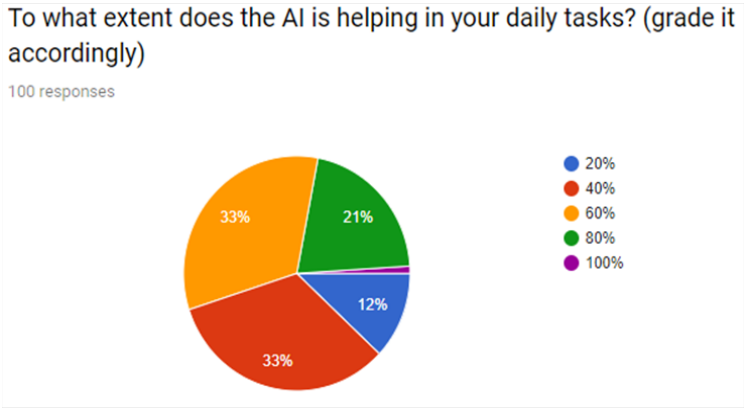
Among the 100 respondents 51% of them agree that AI is more effective than human intelligence.



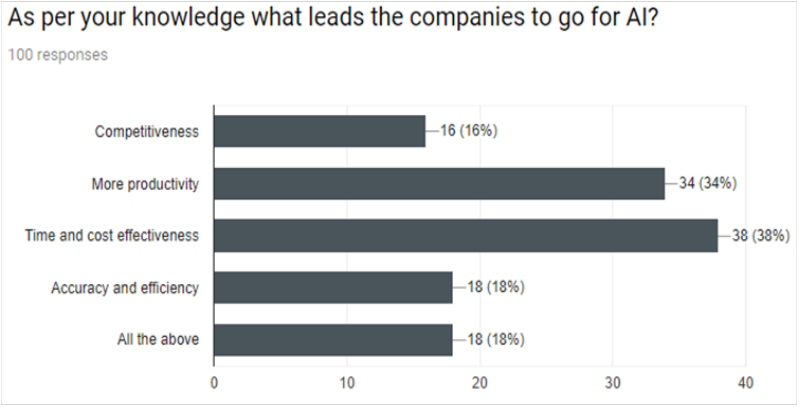
Among the total respondents 55% of them have expressed negative opinion about the complete replacement of AI over Human intelligence.



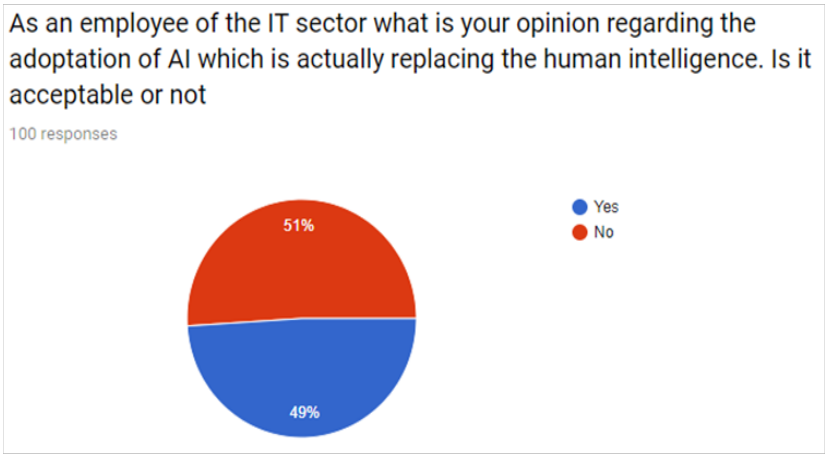
Among the 100 IT employees taken to survey, 27% of people have the fear of losing their job due to AI.



The survey tells that 40 to 60% AI is helping them in their daily tasks.

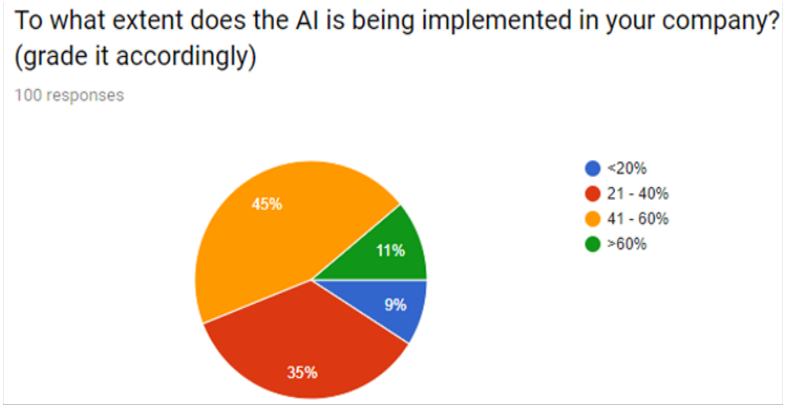


Among the total respondents 38% of the IT employees say that time and cost effectiveness leads the companies to go for AI and next stands the more productivity at 34%.

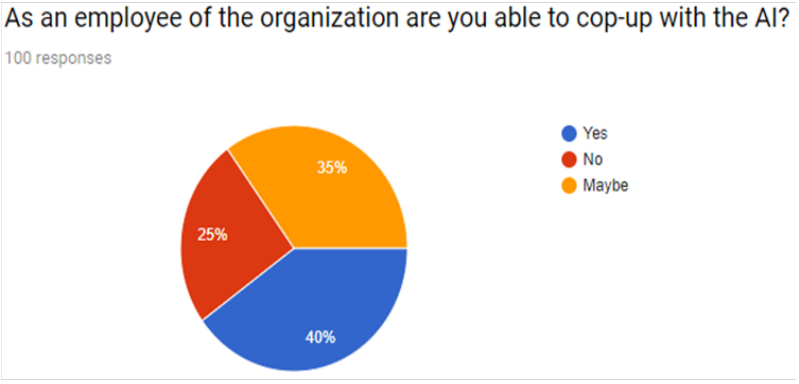


Among the total respondents, 51% of them say yes to the adaptation of AI, as it brings in more accuracy, effectiveness and efficiency and saves money and cost. Whereas 49% of the respondents say no, the main reasons they give are,

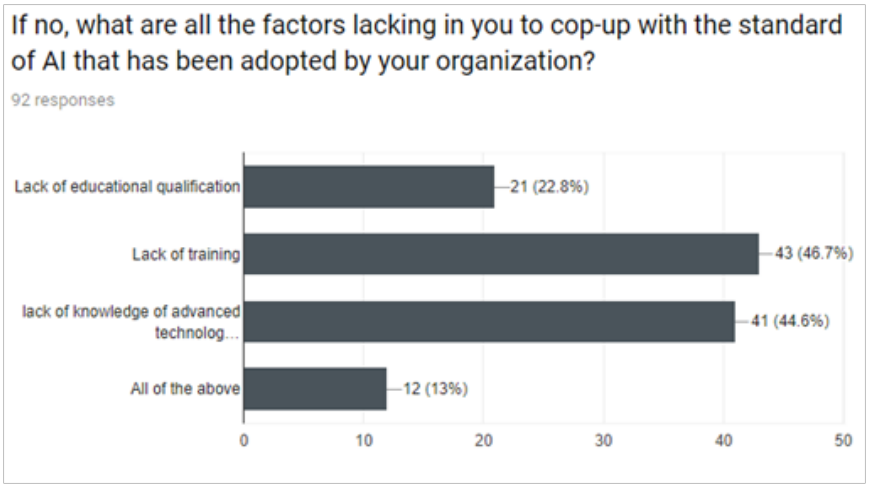
- It causes unemployment,
- AI requires Human intelligence to handle.



Among the total respondents 45% of them say that to the extent of 41-60% AI is being adopted in their respective companies.

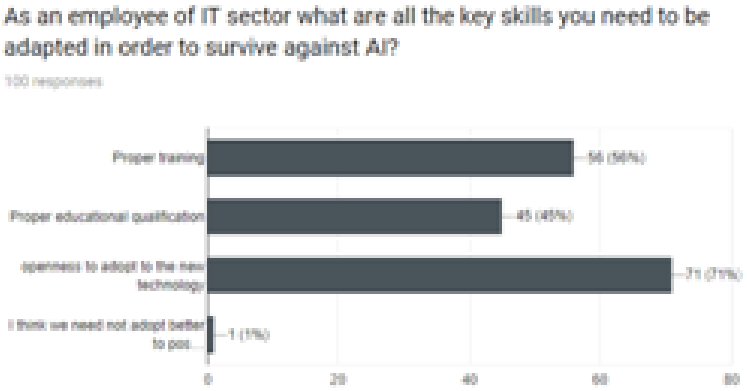


Among the total number of respondents only 40% of employees are able to cop-up with the AI.



The employees are not able to cop-up with the AI because,

- Lack of training and Educational qualification
- Lack of knowledge of advance technology.



Among the respondents, 71% employees say that they should have the ability to adopt to the new technologies, and 56% say that proper training helps them adopt to the AI.

Findings

- The above survey shows that AI is more effective than human intelligence
- The employees are positive towards the adoption of AI
- AI cannot fully overtake the human intelligence
- Only 40% of people are able to cop-up with the AI
- 35% are not able to do so because: they lack proper educational qualification, training and knowledge about advance technology. This is where the employees need to improve their skills in order to develop positive attitude towards the AI.

Conclusion

In the current scenario AI has become the major priority of the organization. As per the study it has been evident that the major part of the companies has been acquired by the AI. So the human intelligence has become limited even though the AI is developed on human intelligence. The employees of IT sector are still struggling to cop-up with the standards of AI. So this struggling situation can be solved by giving proper training to the employees, hiring the employees who have proper educational qualification and who can understand the situation better and change accordingly, and the employees should be open to adopt the new changes in technology.

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Digitalisation in Indian Rural Marketing: Awareness of Digital usage in Rural Marketing

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Abtract

The virtual marketing in India is accelerating and rapidly growing in rural areas of the country. Their progress depends on the ability to figure out the basic factors which is needed in the rural area for the development of the society. This paper makes out the high importance of online infrastructure and the effectiveness of internet connectivity with one mission and target and even explains the purpose to take nation forward digitally and economically. This paper initiates and ensures that how people are getting engaged in the innovation process (AI) which is necessary for the sound growth in rural backward areas. It also brings out the significance of sustainable development of the country with the full potential usage of digitalization in rural marketing. And finally figure outs the challenges to be faced by govt. As well as corporate bodies in the way of successful implementation of digital illiteracy, poor infrastructure, lack of coordination among various departments and also issue pertaining in creating opportunities for the common public of the country (rural backward areas) and therefore to make a point (conclude) realizing the vital heights of the effective usage of artificial intelligence and combined effort of both public, govt. And corporate bodies, industrial sectors involvement and their continuous dedication in the field of rural marketing will definitely bring the effective progress in rural marketing.

Keywords: Rural, Digitalization, Economic, Backward Areas, Infrastructure & Sustainable Development.

Introduction

Digitalisation is now plays a vital role in the scope of Artificial intelligence & also it is known as the sound source for the development of India with which Indian economy can anticipate effective improvement in the growth of Rural Marketing by making optimal usage of digitalisation in rural areas .

The overall progress of the Rural Marketing completely depends on the ability of planning, execution, & finally how well we implement the artificial intelligence in the rural area and figure outs the factors which determines the need for the sound development of the society. The virtual marketing in India is accelerating and rapidly growing in

rural areas of the country. Now it is the right time for Indian companies to pursue digitalisation. Whereby it generates profitable revenue to the government of India.

Statement of the Problem

This study aims to analyse the high importance of online infrastructure and the effectiveness of internet connectivity and also brings out the significance of sustainable development of the country with the full potential usage of digitalisation in rural marketing

Objectives of the Study

- To figure out the high importance of digitalisation in rural marketing.
- To examine whether digitalisation practices influences the significant growth in Indian economy.
- To find out the opportunities and challenges pertaining to digital rural India.
- To ascertain whether a combined effort or individual effort of government and corporate sector enhances the Digital rural marketing growth.

Literature Review

Implementation and Creating awareness pertaining to the usage of digitalisation. It is very much necessary to make a point about taking initiatives in implementation of digitalisation in and around rural areas in perspective of the rural marketing. The need for artificial intelligence today is grown to the level of nothing is impossible status. Digitalization in marketing leads to changes from traditional marketing to modern marketing.

Initiative taken by Intel (2015) in Hyderabad relating to bring awareness in digitalization by launching 'Ek Kadam Unnati Ki Aur', an initiative aimed at working with the government to create the blueprint for the digitization of rural India. Launched in June 2000, ITC'S E-CHOUPAL initiative has emerged as the largest internet based intervention in rural India. Google has launched in 2014 an initiative to introduce women to the internet especially those in the rural areas. They have launched a website 'helping women get online'.

Pooja and Neha (2014) in their study examined the scope of rural marketing in India. They concluded in their findings that there exists a large scope of marketing, provided that improvement in infrastructures is carried out. It also stated that the rural market is yet to be exploited.

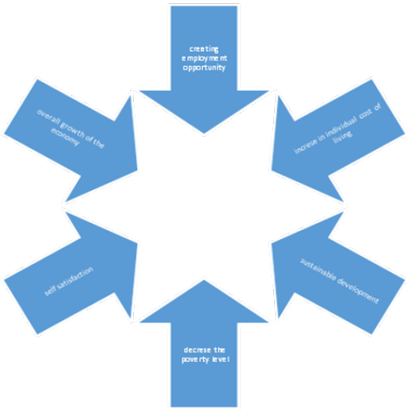
Edward J. Malecki (2003) worked on the potential and pitfalls of digital development in rural areas. Clearly there are potential benefits of the digitalization in rural area which increases the efficiency of the work but it also has downfalls like it would be the cause of shortage of human capital. As there is increase in technology the goods and services are available at a click away from people and that has reduced the human interaction. Internet and mobile have become integral part of our life, whether in case of telecommunication, entertainment or marketing. The increase in the digital economy also.

Nowadays in rural areas also have social interactions through networking apps and it is increasing, mouth word is the form of feedback for any product usage. Common platform should be given to everyone where they can share their opinions and reviews. Young human minds interference makes huge differences in bringing creative thoughts and ideas to overcome the problems faced by the Indian economy relating to the key factors as below:

- Creation of employment opportunities in rural areas leads to decrease in poverty level.
- Decrease in poverty level will leads to the increase in individual cost of living
- Increase in cost of living will leads to the self satisfaction.

- If Self satisfaction is promised to each individuals then we can definitely turn our Indian economy towards sustainable development
- Finally if we anticipate sustainable development overall growth of the economy is possible.

Key Role of Digitalising Rural Indian Marketing



How digital marketing enhance the scope for rural marketing in rural India

With reference to the above cited main point it is important to the citizen of India to figure out the right platform to the right crowd, and also it is very much important to make sure to move forward with the right content. Most importantly putting an effort to understand the human minds (consumer journey) is foremost factor which will take our nation towards developing marketing rural India.

For instance:

KKT(KAN KAJURA TESAN) The radio channel that was accessed through missed calls, and it is the first fully advertiser funded mobile- based entertainment on- demand initiative in India. There focus is now to become the largest provider of content in rural India. Till date, KKT has secured four canne lions(three gold; one bronze), including a first ever gold for uniliver in the mobile space.

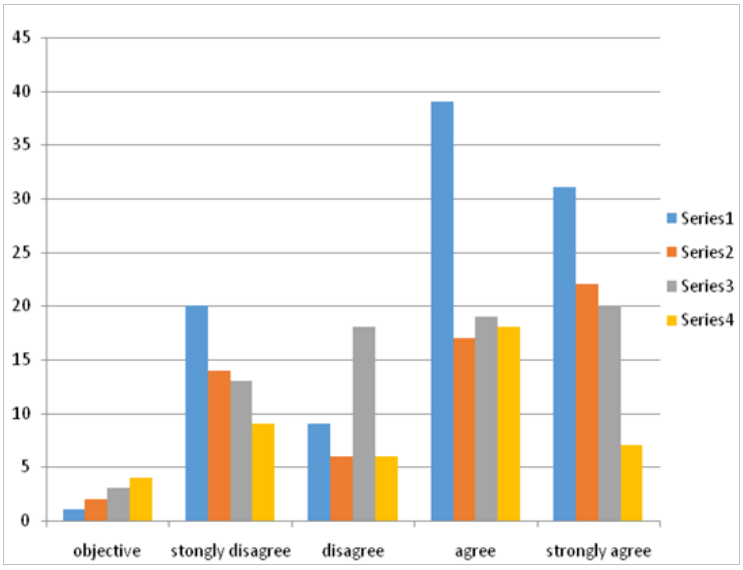
"IF YOU COULD BE JUST A ORDINARY NOTHING COSTS BUT TO BE AN EXRAORDINARY YOUR CREATIVE MIND MATTERS"

Research Methodology

The method of research used to bring out the results to this paper is questionnaire method. With total ten(10) questions we approached the common public residing in nelagadaranahalli our target samples age criteria was around 18 to 40 years.(young generation) and the sample size that we used is only 20 in number. And data analysis can be shown in the below table

Analysis based on our paper objectives

Objective	Stongly Disagree	Disagree	Agree	Strongly Agree
1	20	9	39	31
2	14	6	17	22
3	13	18	19	20
4	9	6	18	7



Data Collection and Analysis

The study used both primary & secondary data. The bulk of secondary data was obtained from Internet. The primary data was generated through the use of oral interviews & questionnaire designed especially for this study. According to my respondents for the objectives which we have mentioned the output for my first and second objective is total 20 rating points for strongly disagree, 9 rating points for disagree,39 rating point for agree and 31 rating points for strongly agree. Finally with the help of this small research the perseverance of the common public of nelagadaranahalli is that they give high importance to digitalisation and they even aware of digitalisation and they are also ready to welcome the concept digital India all over the country.

The output for my second objective was total 14 rating points for strongly disagree, 06 points for disagree, 17 points for agree, and 22 points for strongly agree. Hence I can easily interprets that the citizen of nelagadaranahalli anticipate that the awareness of digitalisation is necessary, they even agree that there will be more difficulties in the implementation of digitalisation in rural marketing. And they also strong believe that digital marketing will bring them the better employment opportunities to the young crowd of nelagadaranahalli.

The output result for my third objective is the total rating points for strongly disagree is 13 points, 18 rating points, 19 rating points for agree, and 20 rating points for strongly agree. Therefore with help of this data we can easily make sure that the young crowd of nelagadaranahalli is anticipating the growth of Indian economy with the implementation of digital rural marketing. The output for my fourth objective is that 09 rating points for strongly disagree, 06 points for disagree, 18 rating points for agree, and 07 points for strongly disagree. With the help of above data analysis we can figure out the high importance of digital rural marketing and also we can make out that implementation of digital rural marketing will create employment opportunities and that will lead to the individual development and also overall development of India.

Findings

- Indian young minds are rigorously waiting for the implementation of digital India
- The view point of nelagadaranahalli crowd towards digital rural marketing is positive
- The anticipation of sustainable development is difficult in a democratic country like India.

- The combined effort of both government and corporate sectors will take India forward (growth)
- The young pupils have many plans pertaining to the digital rural marketing.
- This small research study helped us to make out both merits and de merits involved in digital rural marketing.

Suggestions

- Indian government must take some necessary action in pertaining to the implementation of digital rural marketing.
- Corporate sectors must come forward with the necessary funds for incorporating digital rural marketing in India.
- Both government and industrial units must take care of rules policies that they bring in each amendment, only then the citizen of India can anticipate sustainable development in our country.

Scope of the Study

This study will be limited to Nelagadaranahali semi- rural backward area Bangalore. But we should not deny the point that the topic of this study has huge challenges to be faced.

Limitations of study

This study had limitations which include the problem of diverse coverage of rural areas it is limited only to the 20 samples. There was also the problem of time & uncompromising attitudes of some respondents encountered during the study as some respondents refused to fill the questionnaire while some respondents were not available to answer our questions despite several visits.

Conclusion

As per the survey population have to increase in rural areas by increasing the marketing values which adopts digitalization and creates more job opportunities by this population will sustain and they can implement newer technologies in business. Finally to conclude with this study I would highly appreciate the efforts put in by our government in implementing the concept digital India and also I request government India to take immediate actions regarding encouraging the young pupils of India by encouraging them with their innovativeness and creative thoughts. Hence complete and optimal usage of young generation (man power) will lead to the heights of success in digital rural marketing.

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Primary source and Internet browser:
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AI Based Smart Mirror for Home Automation

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Abstract

The vision of Ambient Intelligence has brought a new twist to the decade old research and industry initiatives in realizing Smart Environments like Smart homes, Smart localities leading to Smart cities. Artificial intelligence plays a major role in home automation which includes voice assistants, smart mirror, motion detector, automated doors etc makes a person's life easier. This project is a stepping stone for the 'Smart City' plan taken by our PM. The focus is to develop a smart home that includes voice assistant as a prominent feature to control various electronics gadgets to carry out daily tasks. As an initiative we have developed a prototype of Smart mirror using Raspberry pi. Features such as displaying weather forecast, temperature, news feeds and calendar are included in the mirror. These mirrors can be used in Airports, Malls and residential buildings making them smart. There is scope for including many features. The objectives of this projects are to describe the design and development of a futuristic mirror that offers simplified and customizable services to the home environment, the mirror interface provides users with the versatility needed for better management of daily tasks, we can implement the same thing in Gathering places to provide a better interaction, experience which gives a smarter feel to the user in an existing world.

Keywords: Home automation, Ambient Intelligence, Smart Mirror, Voice assistant, Smart City, Raspberry-pi, Smart Home, Smart Environment.

Introduction

The world and everything around us is constantly changing. With the advancement of science and technology we are moving towards a more automated lifestyle. We have the thoughts of smart cities, smart homes, smart cars, and more. This modern way of lifestyle requires further development of home automation projects.

Home automation systems are mainly created using Internet of Things (IoT) devices. IoT is an integrated system of communicating devices in which each device has the ability to carry out tasks autonomously, using IoT for home automation has many real-world applications, for example, we can build a smart home which will automatically close or open the windows based on the weather conditions outside or even turn the lights on and off in a particular

room.This paper gives you the implementation of a Smart Mirror using IoT devices with the help of a Raspberry Pi. A mirror is an essential part of everyone's daily routine. What if they could look into the mirror and see something more than themselves? What if your mirror could let you to know that you have an important business meeting at 4 PM today? What if the mirror could tell you that it's cold outside and recommend you to wear a sweater? For this purpose, we introduce an interactive Smart Mirror. A Smart Mirror is capable of displaying the time, date, calendar events weather and news feed. These features will be obtained from the internet and implemented using the Raspberry Pi. The Raspberry Pi runs on the Raspbian Operating System (OS), an easy way to building a Smart Mirror is to use a sheet of two-way acrylic mirror, a monitor and a frame to hold the glass and monitor. There are many benefits of using a Smart Mirror. It makes life easier as the need to look at phones every time we need to check the date or weather is reduced. The Smart Mirror can also be upgraded to display social media websites etc. Adding a motion sensor to the mirror will further increase the speed, ease of use, and will provide another interface for interaction. Now we can get dressed and read news or watch YouTube videos all at the same time and from a convenient place. We can also add voice assistants to communicate with us through voice. The voice assistants are helpful for voice based searching or any other tasks to be done. The Smart Mirror can also help in developing smart houses with integrated artificial intelligence, as well as finding its applications in industries.

Theory

The vision of Ambient Artificial Intelligence (AMI) has made a great impact to the decade old research and industry initiatives in realizing Smart Environments. The AMI vision, promotes an environment where humans are surrounded by intelligent and natural interfaces offered by the interconnected different computing devices embedded into everyday objects. The environment thus created is capable of recognizing and responding to the actions and presence of individuals. AmI can be seen as the driving force toward a more user-friendly and user-empowered smart environment for providing effective support to human interactions. These technologies integrate sensing, processing, reasoning, and networking capabilities in addition to various different applications, services and digital contents.

Related Work

The Smart Mirror is designed to perform several functionalities. It will replicate the functionalities of a natural mirror interface through a flat LCD monitor used for the display. A two-way mirror is used in front of the LCD monitor thereby replicating the function of a regular mirror. For personalized information services the users will be able to obtain very minute updates of latest news and other information, weather reports as well as calendar events. Smart Mirror depicts an interactive interface that provides access to personalized information and services. Voice assistants are a growing technological trend, used in smart phones, tablets and computers. You can control many devices using speech recognition, a voice assistant jumps into action at the mention of a keyword. This is usually a wake command or a greeting that includes the assistant's name, like "OK Google" or simply "Alexa". Once it's called this keyword pricks up its virtual ears, you say a command, or ask it a question. The voice assistant actually uses a technique known as "natural language processing" to understand what you said, and then either answer your question or obey your command.

Applications

It can be implemented in houses in place of a normal mirror this in turn makes the room a smart room and by using IOT based appliances the features of smart mirror can be used in full extent for complete home automation, our homes can be completely controlled by our voice with voice assistant on the mirror for example controlling lights, doors, AC, TV etc by this the house is converted to a smart home.

By implementing the smart mirror in large scale the ideology of a smart city of our PM can be achieved, that is if there are many smart houses and if the smart mirror is implemented in various public places in the locality like in malls or any other people gathering places the locality in turn becomes a smart locality and then the same can be done to other localities which leads to a city becoming a smart city and many smart cities leads to the development of India into a smart nation.

Future Scope

We have designed this futuristic smart mirror to provide natural interaction between the users and the ambient home services, successful implementation of voice control was achieved. The progress can be leveraged to incorporate more variety of voice commands and touch as well. Similarly, the research, tests and development made for the face recognition aspect can be used to incorporate face recognition and the functionality such as multiuser capability into the system. It is also possible to realize the ultimate aim of the project which is to integrate the device into a smart home system, there is also a scope for using it in transportation department for displaying the schedule and also in place of helpdesk at mass gathering. In this fast growing automation loving lifestyle there will be a good demand for IoT devices in the future and there will be a great demand for our product commercially

Conclusion

This primary design is a simple piece of technology that not only integrates with quietly few hardware components into a normal household item by also providing relevant information when it's needed. We can perfectly stack up the functionalities of room to it, making user effortless and get a smarter look of room like the same way that will get to see from the movies brought to life. Same features can be implemented irrespective of size and display of mirrors which can be used as an informative assistance device in Institutes, Hotels, Shops and gathering places also.

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Biometrics and AI in Health Care Industry

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Abstract

In the present scenario, health has become a major aspect for each and every individual. From clinics to hospitals healthcare has become an important part. The number of patients waiting for a doctor is constantly increasing for even their regular medical check-up, which can be unnecessary wastage of time just to consult a doctor for simple health issues. To avoid this, automated machines can be used to diagnose a patient's health and generate a report. But doing them at a faster rate and with high accuracy is the challenging task. Usage of machine learning here in clinical informatics and healthcare systems is becoming the near future. Biometric data can be used to retrieve a patient's previous health records with the help of biometric security systems (which cannot be replicated or the data cannot be stolen by anyone). The biometric system can also be used with temperature detection, stress level measurement and for checking the pulse rate of our body. It can also predict a person's health based on the shape of their face by using the technology of deep learning and facial recognition algorithms. In this paper, we discuss the use of biometrics and artificial intelligence in the field of healthcare that can diagnose a patient's health, without them having to wait for a doctor.

Keywords:Clinical informatics, Healthcare Systems, Biometric Systems, Facial Recognition, Deep learning, and Artificial intelligence.

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Introduction

Medical informatics deals with the study and research of application of Information technology in the field of medical science. Here we explain how biometrics can be used in medical science to detect a person's health and improve the way of how general treatments can be done in a better and faster way, providing greater results. Hospitals have become like a second home to people nowadays, the number of patients is increasing rapidly. This has resulted in the huge storage and manipulation of data. Hence it has become the most targeted sector to breach and steal data in today's world. So the use of Biometric has come into picture which uses fingerprints of the patient to access the data which makes it safe and secure (The data integrity is maintained) and it is comfortable for the patient as all their previous health-care records are available at fingertips. The development and usage of Biometrics are constantly increasing; it has extended its roots to recognizing body temperature, stress level measurement and pulse rate of the body. The data collected is configured through deep learning and Artificial intelligence mechanisms.

Role of Deep learning

Deep learning is a form of machine learning. It is used to solve problems which cannot be done by machine learning. It uses neural networks to provide accurate results and increase the computational work. It is used in healthcare by analyzing patient's disease through multiple visions in order to identify the various types of symptoms that a patient is suffering from and then relates them together to identify the type of disease he is suffering from accurately. This in turn helps the doctor to treat the patient better, thus resulting in improved medical decisions. Artificial Intelligence is used to sense and record what different diseases look like and accurately identify them even better the next time.

For example: In an image recognition system, the raw input is given in a matrix of pixels and then the first layer may abstract the pixels and encode its edges; the second layer composes it and encodes the arrangements of edges; the third layer may encode the nose and eyes; and then finally the fourth layer may recognize that the image contains a face. In the case of a disease, the dots are the symptoms and related disorders. If the symptoms are cough, sneezing, sore throat: Then the disorder is identified as a cold.

Survey

Some of the recent investigations in the healthcare industry are as follows:

- Ford is working on a system that integrates various biometric measurements like pulse, galvanic skin response, and breathing rate to determine the driver's "workload," a concept that relates to attention and performance behind the wheel in a curious manner.

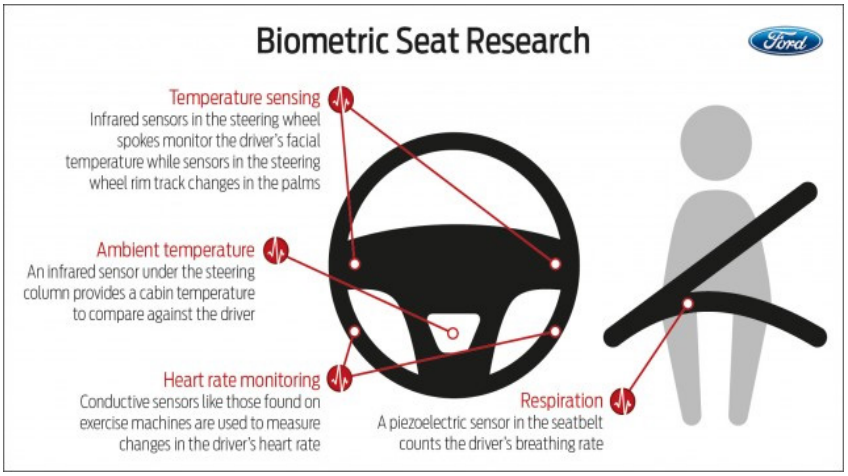

Figure 1 Ford Biometric Seat Research

- Researchers used the facial recognition software to successfully diagnose a rare, genetic disease in Africans, Asians and Latin Americans by the National Institute of Health along with their collaborators
- In 2012, Huang, Bartlett and a team of researchers launched a five-year National Institutes of the Health-funded project to determine a patient's pain. The prototype software was programmed to recognize 20 facial muscle movements known to indicate pain.
- Dr. Ian Stephen of Macquarie University in Sydney, Australia along with his colleagues has developed a computer model that can determine the information about a person's health by just analyzing their face. In the facial shape analysis survey conducted by him and his colleague found out that it could accurately detect a person's health by analyzing their face.

Applications of Biometrics in Heath care

- The stress level management is measured by the change in the interval between heartbeats, known as heart rate variability which is measured by using the thumb. The "stress sensors" are still in their earliest stages of development.
- A robust peg free camera set up is employed for infrared thermal imaging. A 3D dataset of the image is extracted from the vein patterns. Multiple features are extracted from the real parts of the convolved images using the proposed branch point based feature extraction techniques.
- The metal plates that are built can sense pulse and skin conductivity. In addition, infrared can sense changes in body and skin temperature relative to the room temperature.
- The thermal infrared is used in face detection problems. Due to its physiology, a typical human face consists of hot and cold parts. Hot parts correspond to tissue areas that are rich in the vasculature (e.g., periorbital and forehead). Cold parts correspond to tissue areas that feature either sparse vasculature or multi-sided exposure to the environment (e.g., cheeks and nose). This casts the human face as a bimodal distribution entity.

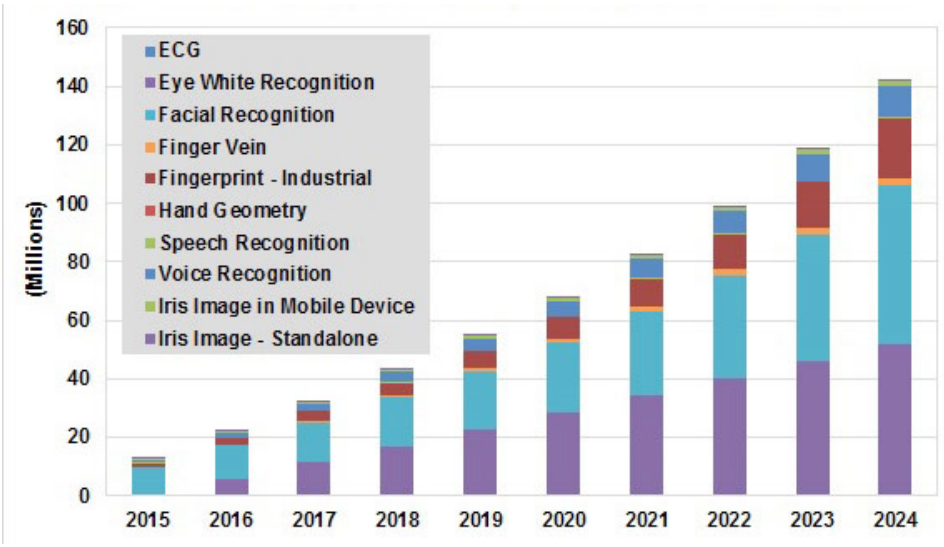

Figure 2 The various Biometrics used in Healthcare

Strength

- The patient's safety is put into a higher level through the use of biometric systems for secure identification.
- Using expert system, the right data can be obtained without any mistakes or manipulation.
- The patient can have access to health care services in much more comfortable way i.e. they need not carry any physical documents with them.
- The time of analyzing and processing data is reduced which indeed results in an improved care which is more efficient and error-free information.
- Patients use the biometric system as a way to protect themselves against fraud and safeguard their identity.
- Patients can receive more successful treatments, as there are no medical errors and inconsistencies in the medical history. This can indeed improve their quality of life.

Challenges

- Storing the entire fingerprint or facial image is not only insecure but also requires huge storage capacity for large user population.
- Biometric devices and sensors are expensive to install at hospitals.
- The usage of patients with these machines might be more distasteful if they are not handled with care and maintained regularly.
- A human touch is required to increase the outcome of a treatment, which is disgruntled when using machines.

The Future in Healthcare

- Artificial Intelligence can assist healthcare practitioners in using medical knowledge to improve the patient outcomes. These systems are loaded with thoroughly analyzed and memorized medical knowledge, and thus providing an excellent clinical and medical solution
- The key reason for the wide adoption and successive growth of AI in healthcare industry will be because it can produce excellent patient outcomes with reduced treatment costs and elimination of unwanted hospital procedures, which indeed improves the hospital workflow and treatment plans is turned towards patient-centric.
- IBM Watson for Oncology is developing an advanced ability to combine the attribute from a patients file with clinical expertise, external research and data which then identifies the potential treatment plan that is essential for the patient.
- The 'cognitive health assistant' Medical Sieve is a project which is being built by IBM to assist in clinical decision making in radiology and cardiology. It is built to analyse radiology image to spot and detect problems faster and more reliably. Where, Radiologists would have to only look at the most complicated cases where human supervision is required.
- By the year 2030, Cognitive systems can be used to diagnose chronic conditions such as cancer and diabetes within minutes by providing real-time 3D images and identifying their physiological characteristics in the scans.

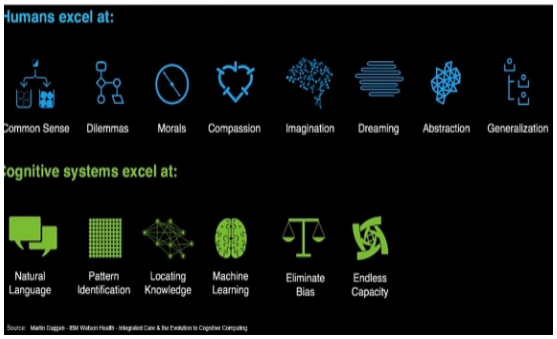

Figure 3 Cognitive Prosthesis

Conclusion

The usage of Biometrics and Artificial Intelligence in healthcare will lead to great evolution in the field of medical science, which will indeed make the Doctors to be more competitive. The biometric devices are used to identify and input the readings, which is then processed by Artificial Intelligence accurately and then deep learning. The diagnostics are made faster, cheaper and accurate than ever before. The only difference between a physician and deep learning algorithm is the physician needs to sleep and the algorithm once given runs (and improves) on continuously.

Note: The reports generated by these machines are only generic. The people are advised to not

be dependent on machines for major medical emergencies as they are only at their early stages of development are not programmed to handle emergency situations.

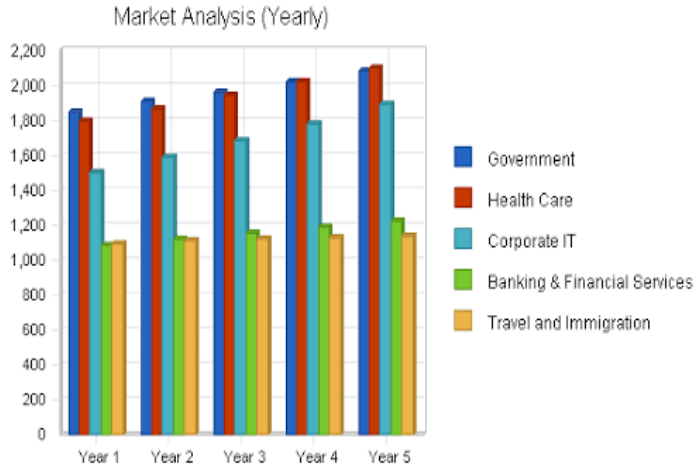

Figure 4 Biometric Market Analysis

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Software as Oxygen for Artificial Intelligence to Enable Business Opportunities in the Marketplace: A Conceptual Study

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Abstract

This paper deals with the role and status of Software as an enableron using Artificial Intelligence in the lifecycle of emerging business opportunities in the marketplace. Currently, the business has identified revenue impetus in adopting Artificial Intelligence in the innovative Business Models in e-commerce platformscreated by technologies such as Bitcoin, Cryotpcurrency, Cyber Technology, Digital Solutions, Machine Learning tools like robots, drones, sensor machines have created new market mining in the high potential use of internet. However, there are certain concerns on its Maintenance, Security, Safety, Environmental impact and Legal implications. The use of Artificial Intelligence enabled bySoftware differs from sector to sector. For example, the tools used in Information Technology sector deals with data analytics and data mining on automatingbusiness-processing activities.Infrastructure sector deals with machine learning,building technologies, floating buildings, digital doors, CCTV, the automobile sector focus on driverless vehicles, the health sector to enable doctor assisteddigital surgeries, educational sector impartingdigitalknowledge. The significance of study under this Paperis to identify basic concepts involvedin use ofSoftware in the Artificial Intelligence and its impact on the business community in the 21st Century. To specifically focus on few selected initiatives and policy undertaken by Government of India for Digital Indiaand the economic rights of the stakeholders of Artificial Intelligence in the marketplace thereby exploring the economic wealth that can be attributable to Artificial Intelligence and its impact on economic development.

Keywords: Artificial Intelligence (AI), Bitcoin, Blockchain, Cryptocurrency, Cyber Space, Cyber Security, Digital Solution, Economic Rights, E-commerce, Internet, Innovation, Machine Learning, Software, Smart Factory.

Introduction

Intelligence in general sense is an attribution of natural person and sometimes identified in few animals like chimpanzees, elephants and African grey parrots on earth. Intelligence is understood in different ways in different contexts , one of the widely popular sense defines "intelligence" as the ability to acquire and apply knowledge and skills that comprise of analytics of various data points acquired or made available to the individual. This attribute is in high demand for individual due its capacity to facilitate in ease of conducting activities, making right decision and to provide workable solution

by saving time and effort to humankind for the society. The decree, magnitude and measurement of intelligence depends on the level of accuracy, impact level and percentage of human or other support interference. It is an ideal system to have hundred percent intelligence and oxymoron. This aspect can be evaluated at specific task level or multiple tasks i.e. both at micro and macro level of humans conducting their day-to-day activities. This paper seeks to focus on a particular enabler i.e. "Software", its use in the enhancement of intelligence systems or i-systems or smart-systems or digital-systems in machines or devices or equipment manmade therefore are artificial by nature. In simple terms when intelligence is infused into manmade systems, the activities, features or functionalities can be referred to as artificial intelligence.It is interesting to study and the need of the hour to examine the role of software in artificial intelligence necessary particularly in the area of economic development and business improvement in the emerging markets and for providing new leads to the traditional business models to improve revenue targets and cause the effect of wealth creation.

India specifically is one of the top economies of the world today and has put in place various initiatives that needs to incorporate advantages and improvements that artificial intelligence so to achieve under the "Digital India" and continue to be highly competitive in the global market. One important initiative undertaken by Government of India is the implementation of Goods and Services tax law i.e. indirect taxes established with an information technology ("IT") backbone as the Goods and Services Tax Network or GSTN to support business conduct their activities under transparency and accountability under the IT framework for its compliance.

Basic Concepts

Software

Software in simple terms is a set of instructions written by using a language (software language such as C., C++, Java, etc.,) developed by programmer to perform predetermined activity or task. The advantage of software cannot be disregarded due to its high speed capabilities, handling enormous data or information and interoperability between various systems that operate on multiple platforms across the world. This impact has created distanceless, timeless, placeness, personless in conducting activities. Historically, we can recollect the traditional television, an audio-video equipment was having many manual functionalities for its operation. By the introduction of new technologies and artificial intelligence solutions, today many features of operating the television are either sensor enabled or remote operated thereby physical interference of human beings for triggering its activities for autpmatically switch on or off, control sound, control colour, change the channels, etc,. Likewise, the use new technologies by incorporating artificial in intelligence today in various other sectors like automobiles (automatic start and off, touch sensor triggers to prevent accidents, etc.,), building technologies (digital doors, remote controlling of various utilities in household activities like automatic switch on/off lights, burglar alarm, etc.,), in entertainment sector, we can observe that there is use of drones, computer interface graphics and robots to support making of cinema to make look like real actors. Therefore, it is quite clear and obvious that Software today has been identified as separate sector, industry, market size, communication, banking, financial transactions, e-governance, day-to-day activities. Software is also necessary and integrated with other sectors due to the advantages offered by software.

Software as Enabler: "Code" as the cause and effect

One of the disruptive innovation caused in human history is the invention of television in the area of communications. Now, due to advanced science, the use of Smart Phone such as Apple or Samsung have miniature various independent devices into a simple user-friendly handheld device.

Some of the devices a Smart Phone comprises include camera (both snap shot & recorder), radio, television, videos, phone book, calendar, data or information cabinet/folders, arranging conference calls between people situated at difference places, etc., by implementation of the SMAC effect (i.e. Social media, Mobility, Analytics and Cloud Computing) created by use of STEM (i.e. Science, Technology, Engineering and Mathematics).

Second to none is another invention i.e. internet (as interconnected network) &World Wide Web (as internet services) have created world ever imagined platform to the society; it has created innovative business models by presenting borderless world and converting the world into a global village. All these solutions were possible only by the use of "software". New forms of business models evolved and new markets were recognised by the economic stakeholders due to introduction of internet related technologies like electronic email for the purpose of obtaining commercial orders, obtaining payments by analytical and predictive solutions.

Block Chain, Bitcoin & Cryptocurrency: New ideas

Block Chain is a digital ledger-growing list of records called as blocks that comprises of transactions for e.g. bitcoin, digital currencies or any other cryptocurrency recorded in chronologically manner, decentralised and can be made public. The ledger allows writing but cannot be editing, adjusting or modified.This technology is yet to get legal recognition due security issues and awareness for the common user.

Challenges, Suggestions & Conclusion: Natural Intelligence v Artificial Intelligence

Artificial Intelligence emerging by way of Machine Learning techniques will not be able to completely replace the Natural Intelligence as there are restricted capabilities of devices to trigger functionalities like certain faculties like sentiments, relationships and emotions (e.g. happiness, anger, crying, etc.,).This is an area of new research and future technologies, certain Gaming Software have been able to show some clues on touching these finer aspects of human creativity and imagination of virtual reality, but there is larger undone research in this area.It is evident that the business community has opportunity to exploit the benefits offered by introduction of software applications and networks. In parallel, it also brings the challenges of attaining accuracy in data or information, environmental concerns by causing pollution by generating electronic waste, cyber security threats and security breach incidents, continuing costs associated with the maintenance of Artificial Maintenance systems. Therefore, adequate legal regime by way of implementing privacy and data protection laws,use of environmentally safe systems by use of standards set as per the legal metrology law and bureau of Indian standards and implement internally recognised standards for information security such as ISO 270001 is necessary an certain important strategy aspects indicated by NITI Aayog.

It is necessary considering the size of data increasing globally is unimaginable and practically not possible for human to analyse, examine and understand them. Artificial Intelligence deals with the Machine Learningaspects include concepts such as fussy logic, pattern and trend analysis, smart statistics, cognitive informatics;Smart Factory (i.e. Industry 4.0) Deep Learning for Big data, Internet of Things if developed by right protocol and standards to provide the right solution.To conclude, we may note that Artificial Intelligence is a boon to society and business community if the modern and latest innovative technology is used in the right spirit with social responsibility towards the society and economic growth and development.

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Artificial Intelligence-Unstoppable in its Rise: Perceptional Study on Impact of Artificial Intelligence on Employment Opportunities

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Abstract

Artificial intelligence (AI) like mobile sensors, robots, driverless cars are here to continuously evolve and transform human life.AI is intelligence exhibited by machines or software by continuous learning.AI is transforming nature of almost everything which is connected to human life like employment, communication, health care etc.For example jobs like accountant, tele callers or desk officer will be mentioned in past tense in some decades.In this context we explore how AI or automation is likely to affect employment opportunities. Some people fear that automation is big threat to employment. But on the other hand there are people who feel it as a part of overall societal development and also create more job opportunities. So we undertook a survey on perceptional study on impact of automation among information technology employees.All the respondents who took part in survey were screened to make sure that they have basic knowledge on automation.The findings of the study indicate that even though they accept that automation will change their job profile, they also perceive that there will be no threat by automation in their jobs. The study was carried out in Bangalore city with special reference to Information Technology(IT) field.

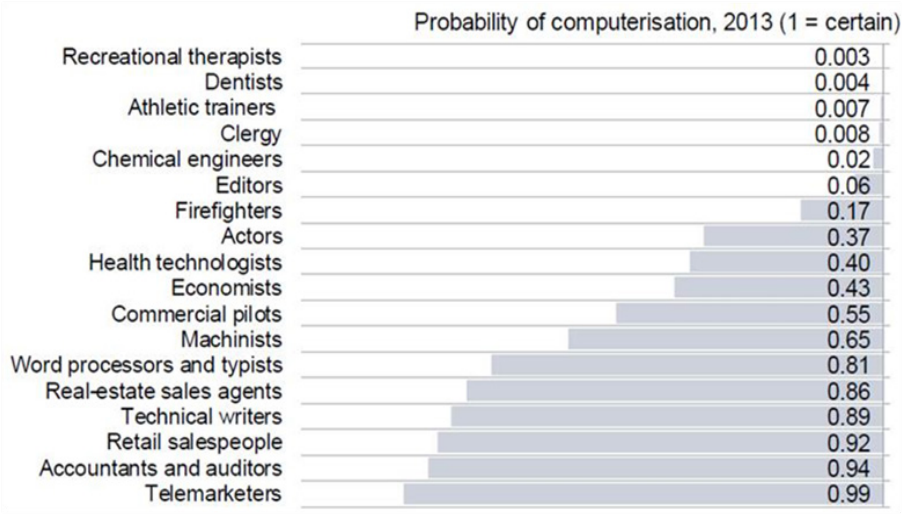
Key words: Artificial Intelligence, Automation in employment, Artificial intelligence and IT industry, Automation

Introduction

"Artificial Intelligence - here I come, upgrade yourself or I will make u abscond".

It sounds so dramatic, but in future this is what going to happen unless each and every employee is aware of what is happening in present world and what is that extra thing he should have to compete with technology. Artificial intelligencesometimes called machine intelligence is the intelligence demonstrated by machines, in contrast to natural intelligence displayed by humans and other animals.C. Frey and M. Osborne (2013), argue that there are sectors

like telemarketers, programme writers where complete computerization might take place. However a dentist or a clergy cannot be replaced by automation.



Source: *"The Future of Employement: How Susceptible are Jobs to Computerisation?", by C. Frey and M. Osborne (2013)*

AI proves to be very effective in handling even more complex activities. They prove to be faster, more accurate reliable and cheaper than corresponding team of humans. It doesn't sleep, need breaks, get sick or take vacations, and it doesn't need health insurance or retirement benefits. It can work around the clock, is much faster than you are, can instantly scale to levels that human workers can't simply achieve, can quickly acquire and learn new skills, and it doesn't make mistakes.So, if you can't fight AI, then what can you do to safeguard your future employment? The first step is to get yourselfeducated about it. Artificial Intelligence rather than destroying jobs, it redefines them.While it's true that many low-skill jobs will fall by the wayside, replaced by the sophisticated automation, AI will create new careers and industries will emerge that haven't been invented yet.

Statement of problems

Even though it is said that there will be a stream of new business opportunities that will be created by use of Artificial Intelligence in automation, there is a great fear among people regarding what will happen to their job opportunities if machines start doing all the major work done by human beings till date. So we try to capture the perception of the IT employees on the future of their job scenario and impending automation.

Review of Literature

J Gregory(1982), member of National Association of office workers has done a research paper on " "RACE AGAINST TIME: AUTOMATION OF THE OFFICE: AN ANALYSIS OF THE TRENDS IN OFFICE AUTOMATION AND THE IMPACT ON THE OFFICE WORKFORCE", where in a study was made on hownew technology is being developed to computerize the very flow of work in the office, its potential impact is qualitatively different from previous office equipment which "mechanized" or "automated" routine tasks.

Margrethe h Olson(1982) , New York has done a research paper on "impact of office Automation on the Organization" .wherein study was made on potential impacts of office automation on the

organization and it stresses the need, when implementing automated office systems, to take a broad perspective of their potential positive and negative effects on the organization.

Ida RussakkoffHoos(1960) has done a research paper on "Impact of Automation on workers" wherein the author makes an attempt to access long term results of office automation either for workers concerned or for the economy in general

Paul Osterman(1986), Associate professor of economics at Boston university, conducted a study on "Impact of computers on Employment of clerks and managers", and found that that the net effect of computers in 1972–78 was to depress the employment of clerks and managers substantially, but that the pattern over time—a larger displacement effect in the first few years, followed by increased clerical and managerial employment—supports the bureaucratic reorganization hypothesis.

Alen L Porter(1987)Georgia Institute of Technology, Atlanta, has done a research on "A TWO FACTOR MODEL OF THE EFFECTS OF OFFICE AUTOMATION ON EMPLOYMENT" wherein he found out thatoffice automation will enhance productivity,office workload is apt to increase in response to enhanced information handling capabilities, implying demand for additional workers

LeneKromann, Jan Rose Skaksen, Anders Sørensen(2011), Copenhagen Business School has done a study on" Automation, labor productivity and employment – a cross country comparison", they found out that that First, automation increases labor productivity; second, that automation decreases employment in the short run; third, that automation increases employment in the long run.

Objectives of the Study

1) To understand the impact of Artificial Intelligence on IT industry
2) To find out the perception of IT employees on automation
3) To find out impact of Automation on IT employees

Based on the above mentioned objectives the following hypotheses were developed.

H1:There is significant difference between employee's gender and their perception on automation.
H2:There is significant difference between employee's age and their perception on automation.
H3:There is significant difference between employee's educational qualification and their perception on automation.
H4:There is significant difference between employee's job experience and their perception on automation.
H5:There is significant difference between employee's designation and their perception on automation.

Scope of the study

This study helps in understanding the perception of the IT employees on automation and its impact on their jobs in the future in Bangalore.The same study may be applicable to other industries as well.

Limitations of the study

1) Research is confined only to a limited sample size of 100
2) Research is confined only to impact on employment opportunities
3) Research is confined to only IT employees

Research Methodology

The authors would like to specifically focus on perception about automation and how does it will have an impact on their jobs in the future.

Descriptive research design

Descriptive research is a type of research design is description of current state of affairs as it is at present. A close ended online questionnaire was administered to the respondents.

Sampling Techniques

Simple random sampling technique was employed in selection of sample.

Sample Size

The sample size of this study constitutes the IT employees with the total sample size of 100.

Data Collection methods

A questionnaire was used to collect primary data, since primary data is one original in nature.

Statistical tools

The data was analyzed using SPSS version 24 and AMOS.

Data analysis and interpretation

Table No.1 Demographic Details of the respondents

Gender	**No. of Respondents**	%
Male	68	68
Female	42	42
Total	**100**	**100**
Age		
20 to 30 years	52	52
31 to 40 years	32	32
41 to 50 years	12	12
> 50 years	4	4
Total	**100**	**100**
Educational Qualification		
Diploma	16	16
Degree	32	32
Post Graduate	52	52
Total	**100**	**100**
Experience		
< 1 year	20	20
1-5 years	44	44
> 5 Years	36	36
Total	**100**	**100**

From the above table it is inferred that out of the total respondents total 68% were male and 42% were female.52 % of the respondents belongs to age group of 20 to 30 years of age and 32 % belong to age group of 31 to 40.out of the total respondents12 % belong to the age group of 41 to 50 years.32 % of respondents have post graduate qualification , 52% are undergraduates and 16% are diploma holders.44% have 1 to 5 years work experience and 36% respondents have more than 5 years work experience.

Table 3 Scope for Automation in different Departments

Departments	No.
Production	81
Accounting and Finance	7
HR Department	7
Research and Development	13
Marketing Department	10

It is inferred from the above table that most influenced department on implementing of automation is production department.

Table 4 Perception on Implementation of Automation in their Jobs

Items	Mean	Standerd Deviation
Increased Productivity	2.92	.394
Helps in better Decision Making	2.80	.492
More Accuracy	2.64	.560
Time Saving	2.40	.492
Reduced Workload	2.32	.737

It is inferred from the above table that most of them believe implementing automation will increase their productivity (mean=2.92) followed by helps in decision making (mean=2.80)

Table 5 Perception on Automation's Impact on Business Organization

Items	Mean	Standerd Deviation
Automation will allow us to New Business	2.88	.327
Will gain Competitive Advantage	2.88	.433
To have better Control on workforce	2.84	.368
I feel it will lead to a tremendous Job Fall	1.96	.875

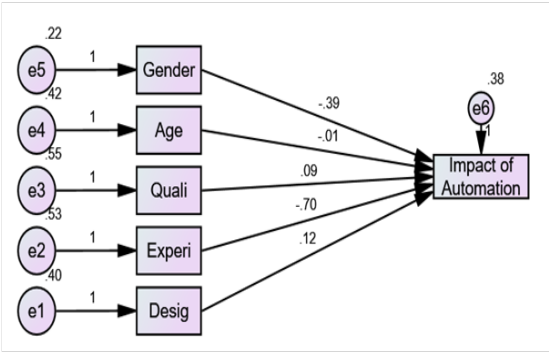
It is inferred from the above table that most of the employees feel thatautomationwill allow a business organization to move into new business and it will help in gaining competitive advantage as well(mean=2.88).and few(mean=1.96) feel that it will lead to job fall in future.

Table 6 Perception about the Impact of Automation on Job of Individual

Items	Frequency	%
I don't think any threat to my job	48	48.0
No Idea	32	32.0
I might lose my job	20	20.0
Total	**100**	**100.0**

It is inferred from the above table that 48% of respondents feels that automation is not a threat to their job. Whereas 32% of respondents have no idea on what will be impact of automation on their job.

Diagram 1: Path Analysis on the Employee's Perception Towards Impact of Automation



Chi-square:76.191, RMR: .039, GFI :.956, AGFI:.914, RMSEA:.073

Table 7 Regression Weights

			Estimate	S.E.	C.R.	P
Gender	→	Impact of Automation	-.390	.133	-2.935	.003
Age	→	Impact of Automation	-.005	.095	-.056	.956
Educational Qualification	→	Impact of Automation	.090	.084	1.078	.281
Experience	→	Impact of Automation	-.698	.085	-8.228	***
Designation	→	Impact of Automation	.125	.098	1.272	.203

From the path analysis we can conclude that the gender and experience have a significant effect on the perception on automation where the p value is less than 05.

Table 8 Hypothesis Results

Hypothesis	Result
H1: There is significant difference between employee's gender and their perception on automation.	Accepted
H2:There is significant difference between employee's age and their perception on automation.	Rejected
H3:There is significant difference between employee's educational qualification and their perception on automation.	Rejected
H4:There is significant difference between employee's job experience and their perception on automation.	Accepted
H5:There is significant difference between employee's designation and their perception on automation.	Rejected

Out of the five hypotheses formulated only two were found to be significant. Only age and job experience have a significant difference in the perception of automation and all other variables (age, educational qualification and designation) did not affect the perception on automation.

Findings

The researchers found out that out of the total respondents majority were male respondents and majority of the respondentsbelongs to the age group of 20-30.Most of the respondents have post graduation qualification. And most of them have morethan1 years work experience. The respondents feel that production department is the one where there will be highest possibility of implementation of artificial intelligence. And most of them feel that it will help in increase productivity as well as great support in decision making. Respondents are also of opinion that from the point of view of business organization it will help in gaining competitive advantage and will help in expanding business. Most of them those who have more than a year experience are in favor of implementation of Artificial intelligence and feels no threat to their job in future. Most of the respondents think they will not lose their jobs because of automation. The above results provide a picture on what are the major elements that influence the implementation of automation. It is evident from hypothesis analysis that gender and work experience have great impact on perception on implementation of automation and all other variables (age, educational qualification and designation) did not affect the perception on automation. According to the results it is very clear that employees are ready to welcome the developments in technology

Suggestions

It is evident from the study that few low level employers have a fear that they will be replaced by artificial intelligence or automation.Society needs to provide education and job placement opportunities for those who will be most affected by automation. By providing proper training on upgraded technology company can prepare its employees to withstand the implementation of artificial intelligence. Updated knowledge imparting is the best solution to those who fear that their jobs on fire. Governmental have to implement policy to encourage technology education to all graduates irrespective of the course. Acquiring of better computer skills will be a blessing for employees in any field. To remain relevant in the Age of Automation, IT pros must be fluent in so-called “soft” skills like strategic and critical thinking, communication, collaboration, and anticipation. Most important, our future relevancy depends on our ability to learn new skills on the fly — to adapt quickly to new and emerging technologies and position ourselves to do the things for our clients that those new technologies can’t do. Not long ago, we could count on our degrees and on-the-job experience to carry us for decades and build our careers.

Conclusion

The main objective of the study is to find out impact of implementation of artificial intelligence on employment opportunities. Study revealed that there are major portion of employees who wants artificial intelligence to be implemented in their business. Organizations are looking for faster outputs, improved quality, and higher profits. Consumers want excellent products at a lower price. The demand to do more with less has been driving innovators, engineers and technology gurus to develop robotic replacements much like the machine replacements from the industrial revolution. Though many jobs are in danger of disappearing, a change in skills may still keep them alive. Success of any business organization depends on how well a company can blend its human resources with technology without eliminating any employees. Employees are ready to welcome development in technology.

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Machine-Learning in Wealth Management - A Study on Investor's Preference for Artificial Intelligence in the Field of Wealth Management

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Introduction

Increasing use of artificial intelligence in all spheres has changed the working styles of human beings, giving them the ease of carrying out the activities. From travel, health, education, communication and other related fields, now you can see it entering wealth management. A vast number of companies in the wealth management sector have adopted artificial intelligence based services for their clients in order to deliver timely advice on investment, as per their convenience. These services are quickly accessible, cheaper, transparent, unbiased and accurate in terms of their data. Since these advisory services are being provided by machines, as opposed to their traditional human counterparts, they have been dubbed "Robo – advisors". The present study gives a glimpse of the evolution of the Robo-advisory model, its features and its future potential in the wealth management sector. Primary data was collected from a random selection of 50 investors belonging to different stock holding companies in Bangalore. From the collected data, we have tried to analyse how artificial intelligence has impacted Wealth advisory management in India. Further, the study also reveals whether the investors prefer traditional advisory sources or machine-based advice in managing their portfolios, or if they prefer hybrid models. At present, though the use of machine-advisors is relatively small, it has immense potential to expand in the future. Though they require higher investment in the initial stages, they prove to be cost effective in the long run as they save the cost of human advisors. Decision making gets easier, since it is based on systematic and quantitative research. This paper tries to highlight the potential of Artificial intelligence in wealth management and also discusses its present status and future prospects.

Hybrid Wealth Advisory

Today, there are plenty of hybrid advisory models which are typically characterized by digital platforms used by the client alongside an advisor, brokerage, or robot-account that provides a periodic meeting with a Certified Financial Planner. Looking ahead, hybrid models would likely do more than simply combine these elements—technology and human advice under the same banner. Hybrid models, generally speaking, allows for semi-dedicated relationships to exist with human validation of digital advice. Emerging Wealthy and High Net Worth investors nowadays prefer the option for self-directed investing. This requires a robust digital platform to provide an environment for consolidating data to make informed decisions. When clients have higher expectation from digital tools, investment firms should match it with providing more control to their clients to make investment decisions, balancing it with human advisors as decision validators. This can help in laying the foundation for a "highly-differentiated experience", enabling regular and continuous interactions rather than periodic discussions with investment advisors. It can enable firms to implement innovative business models. Advisors with a differentiated value propositions could still command high fees for their services. According to our research, Indians are slightly less cost conscious than investors in the United States. 44% Indian investors say they value a company that will save them time over a company that charges lower fees. (The same statistic is 55% in the United States). Fee structures that highlights "pay-by-the drink" options offering a choice offlat rate coupled with extra fees for service options or a true "a la carte" model which appears to be prominent with investors and could represent a fit for hybrid advice. These options enable the firms to alleviate investor's concerns over cost while improving transparency. In India, more than half of survey participants (53%) said they would prefer a flat fee with additional costs for add-ons. Only 17 percent preferred a commission-based model, while 29 % preferred paying a percentage of assets under management.

How Investors Are Serviced Today

In India, investment advisory can be classified under three different categories.

a) Traditional Advise
b) Robot Advise &
c) Hybrid Models.

Most elderly investors, who invested in a variety of different avenues and closely monitor their returns, prefer traditional advice. They are more insistent on in-person advice for their investments. However, in the recent past most popular investment advice companies have started using robo advisory to improve the quality of the advice and also ensure investor satisfaction.

Robo-Advisory Market Trends

A Growing and Changing Landscape

The main reasons for the increasing trend of using Robo-advisor's Asset Under Management (AUM) is their user-friendly interface, efficiency of portfolio analytics, relatively low costs and consistent performance. Countries like the US have seen an 8-fold increase in the usage of automated Portfolio management in AUM, from USD 2.3bn in 2013 to USD 20bn in Q1 of 2017 and are reflected in the growing number of startup FinTech companies providing automated services. One of the reasons behind this could be the increasing investment of retirement savings in robo-advisory accounts. Once growth levels out in the future with increasing competition, we could see Robo-advisory firms evolve from providing Business to Consumer or B2C services to Business to Business or B2B services. These firms would either partner with established banks and asset management firms or be absorbed into them.

Compared to this, the AUM of Robo –advisory companies is much lower at about 5-6% of US levels. This is partly due to lack of available data as not many companies publish data on AUM and also because many investors do not yet participate in Capital market investment, preferring instead investing their savings in traditional bank deposits. Industry estimates indicate at-least 5 robo-advisory firms that manage in excess of 100 Million EUR each. The UK is the leading country which has adopted this technology to manage as much as 75% of AUM of the entire market. Germany stands second accounting for 17%. Hence, a majority of the firms offering automated services are concentrated in these two countries

Investors in the EU are highly-risk aversive, and rely primarily on Pay-as-you-go benefit pension schemes. The EU has a very large Asset management industry, where traditional asset managers and banks have started offering robo-advisory services for its institutional and High Net Worth individual(HNWI) investors. With a shift from deposit savings towards capital market investments, the scope for robo-advisory services will gain momentum in the long run.

Wealth Management Through Robo – Advisor

This implies handling customer's wealth thruon-line process using artificial intelligence through a 'robo advisor'.

Robo-Advisor – Meaning

Robo Advisor is an algorithm driven software that provides automated financial planning services on digital platform. It is designed to perform so many functions like registration of clients, analysis of clients' needs and goals, offer advice and alternate advice on their investment, asset allocations, rebalancing etc. It may or may not be assisted by a manual advisor system.

Available Robo Advisors in India

Many financial firms are now moving towards the online investment and savings. Some of the developed robo advisors in India are:

- Big decisions: It provides online services for all your investment needs.
- Fundsindia: It was initially developed for mutual funds only. It was started in 2009 at Chennai. Now it provides financial advice in all the fields of wealth management
- Scrip box: This is also an online platform where investments can be started with a very minimum amount and also guides about the wealth management.
- My Universe ZIPSIP: This is the latest robo advisory firm launched by Adityabirla group. This model focuses on financial management and investment techniques.

Limitations of Using Robo Advisors

Robo advisors are modern, easy to use and provide standardized investment solutions. But they are not fool proof. They have a number of limitations like the following: They fail to provide a personal guidance. They work on artificial intelligence to the level

- They are programmed. They are not designed to think beyond their programmed capacity and are not so flexible to accommodate a unique situation when investors need advice beyond money matters.
- An integration of financial, tax and estate plans. These demands can only be handled by a seasoned human advisor and not a robo advisor.
- Some investors require a "face to face" interaction with the advisor which is not possible in this case.
- And that may take time, money and efforts. Human advisors on the other hand start using the modifications with immediate effect.

Literature Survey

The concept of savings and investment is changing with time. People are slowly moving towards online investments in mutual funds, equities etc. which provides the automatic selection of assets which fulfils the requirement of an individual and also gives the maximum benefits.

F.Dapp (2016) talks about the working and advantages of using robo advisors. Artificial intelligence has taken place in all areas of our lives. A lot of progress has been made in the field of pattern recognition, modern data analysis and the use of self-learning algorithms. To handle an increase growth in data volumes, we need to progress in the field of technology. We need digital services to automate and manage financial data, provide intelligent advisory solutions to the investors. A Joint Committee Discussion Paper on automation in financial advice by Joint Committee of the European Supervisory Authorities (December 2015) has described continued increase in the digitalization of financial services across the banking, insurance and securities sectors. The main characteristics of automated financial advice tools have been discussed in terms of potential benefits and potential risks and limitations or errors in automated tools that may not be easily identifiable for consumers or financial institutions. The committee feels that in the securities sector, automation of financial advice is a more mature phenomenon.

Robo-Advisory Services Study (2015) by A.T. Kearney (a leading global management consulting firm) was conducted on a nationally representative sample of more than 4,000 U.S. consumers who were at least 18 years of age at the time of study and who had bank accounts. The examine focussed on "clients funding choice making", focus of, interest in, and willingness to apply robo-advisory services The study exhibits that robo-advisory will develop at a quick rate as increasingly more human beings find working on virtual systems simpler than going to an investment advisory physically. They found that the growth of the robo-advisors will reduce the overall asset management revenue. The traditional players will have to lower their fees structure and this will result in loss in billions of dollars. They categorized the traders as pioneers, enthusiasts, capacity past due adopters and not likely adopters. The study showed that only a small percentage of people fall in the last two categories. They concluded that future of robo advisory is promising.

"Blackrock's - Digital Investment Advice" :research about digital advisory servicesand concludes that they have the potential to significantly mitigate behavioural finance biases and provide customized tools for investment to individual investors at a fairly low cost. They as policy makers, they should consider the rapidly changing digital advice landscape and the application of existing regulations to digital advisors. It is also important to allow for a variety of different digital advice business models that meet different client needs, including both start-up firms and existing market players such as established wealth managers with direct-to-consumer platforms or business-to-business platforms. Digital advisory space has five precise areas need consideration as : "(i) disclosure standards and cost transparency, (ii) recognize your purchaser and suitability requirements, (iii) set of rules design and oversight, (iv) trading practices, and (v) records safety and cyber safety".

(Park1 et al.) research shows US asset management corporations that use robo-advisors to control assets and investigated the robo-consultant strategies of the pinnacle businesses, particularly "Schwab intelligent", Wealthfront and betterment. They observed that their investment philosophies for robo-advisors are similar, but each robo-guide uses extraordinary methods in its procedure of selecting asset types and assets to invest in.

The Future of Advisory: Exploring the impact of Robo on Wealth management (September 2016) states that the impact of robo on conventional wealth advisory is not going to be too disruptive. The document tries to assess the progress of robo advisory, to explore the probably methods in which artificial intelligence will impact Wealth management enterprises going ahead,its future

potential in the wake of technological evolution and its adoption by way of new and established players. The robo advisors themselves would be cautious about the dangers because, to avoid tarnishing their credibility.

Market Research Centre (2017), PWC found that over the past few years, the popularity of Robo-advisors has steadily risen. Nutmeg in the UK and Wealth Front and Betterment in the US have been the market leaders. Globally, as of December 2014, robo-advisors have been managing investments directly to the tune of USD 19 billion as per the findings of Corporate Insight. With artificial intelligence providing services like personalized portfolio management, tax-based portfolio customization and smart rebalancing of risk along with 24/7 access, all services being provided at comparatively lower costs, the market share of robo-advisories is set to increase.

Delliote (2017) found that cost-conscious investors prefer hybrid models compared to purely traditional advisors or purely artificial intelligence based advisories in the wealth-management field.

Research Design

Quantitative research method was adopted in this study. This study outlines the study of investor's preference towards Artificial intelligence in wealth management framework. This study focuses on the how Artificial intelligence is superior in terms of quality advisory with low cost is analyzed with the data collected from the potential investors in Bangalore.

Research Objectives

- To analyze the impact of artificial intelligence in wealth management
- To analyze the investor's perception towards artificial intelligence
- To find out whether artificial intelligence is superior to traditional advisory.

Data Collection Method

Primary data are used to analyze and provide a clearer and in depth understanding.

Primary Data

Primary data is the data that has been collected from first hand-experience. Therefore, it's far more dependable, real and objective in information collection. For current study, questionnaire is chosen because of its comfort, inexpensive, reduction of biases and greater anonymity.The purpose of the questionnaire is to generalize from a sample to a population to make inferences about the characteristics of the population. Therefore, 50 questionnaires were distributed to the investors who have been investing regularly in various investment avenues.

Sampling Technique

Sampling techniques used is convenient random sampling, 50 questionnaires were distributed to the investors who have been investing regularly in various investment avenues.

Result of Cronbach's Alpha

Variable	Total Number of Question	Cronbach's Alpha	Outcome
Wealth Development	5	0.689	Acceptable
Wealth Protection	7	0.782	Very Good

Tax Minimization	6	0.893	Very Good
Auto Pilot	5	0.852	Very Good
Goal Based Advisory	7	0.563	Acceptable
Full Service	9	0.548	Acceptable
Robo Advisory	9	0.987	Excellent
Traditional Advisory	7	0.921	Excellent

Data analysis

SPSS software was utilized for obtaining the tested result by completely analyzing the data.

Inferential Analysis

Inferential evaluation is a set of statistical techniques and methods utilized in confirmatory statistics to draw conclusions approximately a populace from quantitative facts amassed from a sample. SPSS version 17 was employed to conduct the following types of inferential analysis:
Pearson Correlation Coefficient Analysis
Multiple Regressions Analysis

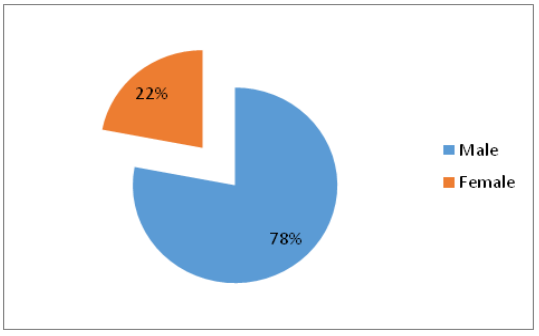
Descriptive Analysis

Respondent's Demographic Profile

The Demographic profile of the respondents has been identified in Section A of the questionnaire. A total of seven questions were asked to collect data regarding to the respondents' gender, age, race, marital status, occupation, monthly income and education level.

Gender of Respondents

Category	Frequency (N)	(%)
Male	78	78%
Female	22	22%



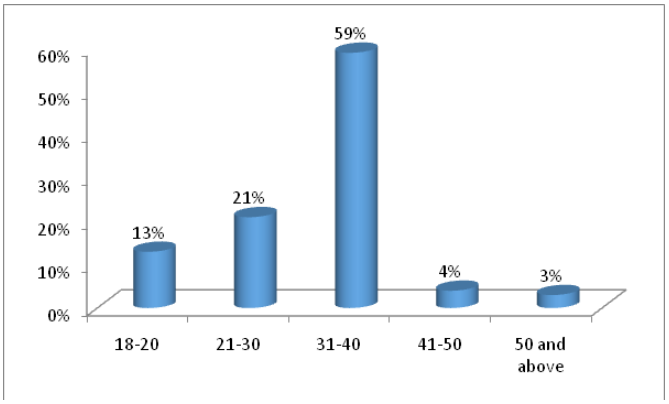
Source: Developed for the study

Interpretation

As shown in Figure and Table, the analysis of respondents' gender have revealed that 78% of the respondents were male while female consisted of 22% of the total sample size.

Age of Respondents

Category (Age)	Frequency (N)	Percentage (%)
18-20	13	13%
21-30	21	21%
31-40	59	59%
41-50	4	4%
50 and above	3	3%

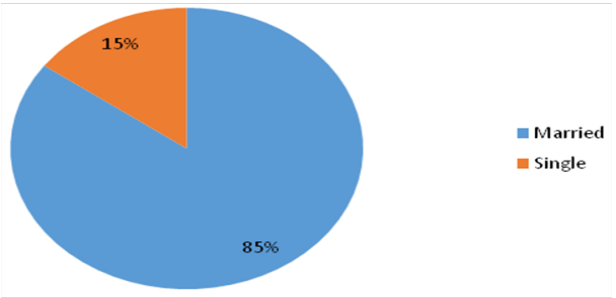


Interpretation

Based on the above table and chart it is very clear that the majority of the investors (59%) are in the age group of 31-40 and the least is 50 and above. Also it is noted that the investors from 31-40 are very much speculative and they are more into equity stocks and other risky portfolio. However the aged population is not ready to take any risky investments.

Marital Status of Respondents

Marital Status	Frequency (N)	(%)
Married	85	85%
Single	15	15%

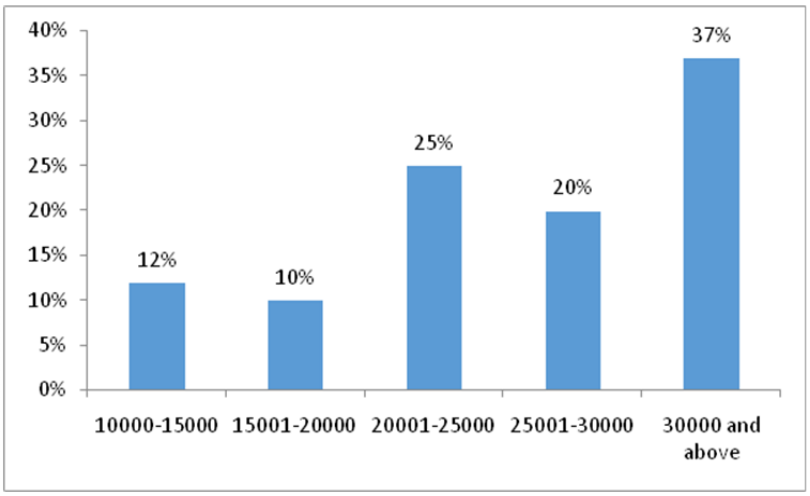


Interpretation

As shown in Table and Figure there are only 15% of the respondents were single and 85% of the respondents were married. Hence according to the data collected almost all the investors are in the middle age group and they are married.

Income of Respondents

Income	Frequency (N)	Percentage (%)
10000-15000	12	12%
15001-20000	10	10%
20001-25000	25	25%
25001-30000	20	20%
30000 and above	37	37%

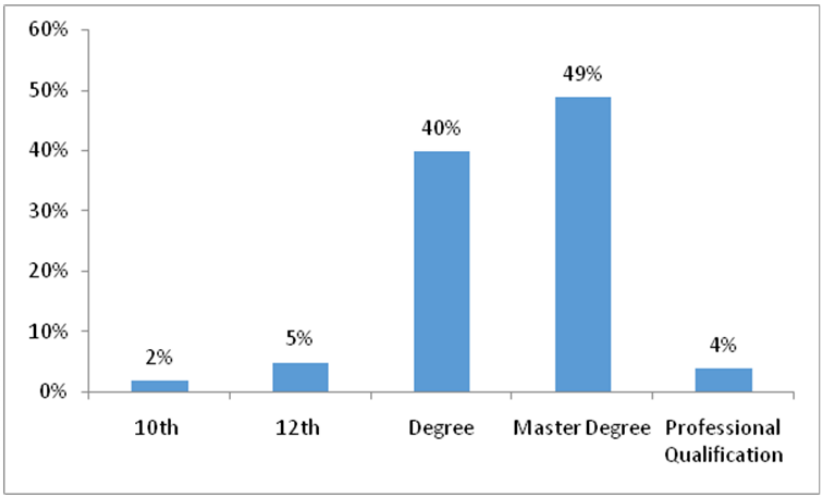


Interpretation

From the above table it is noted that the majority of the investor's income is above 30000pm and the least would be 10% which is salary ranges from Rs.15000 to Rs.20000. most of the investors pertaining to the income category more than Rs.30000 are investing in advance and innovative financial instruments like mutual funds and other equity based stocks so that the return is pretty high.

Education of Respondents

Education	Frequency (N)	Percentage (%)
10th	2	2%
+2	5	5%
Degree	40	40%
Master Degree	49	49%
Professional Qualification	4	4%

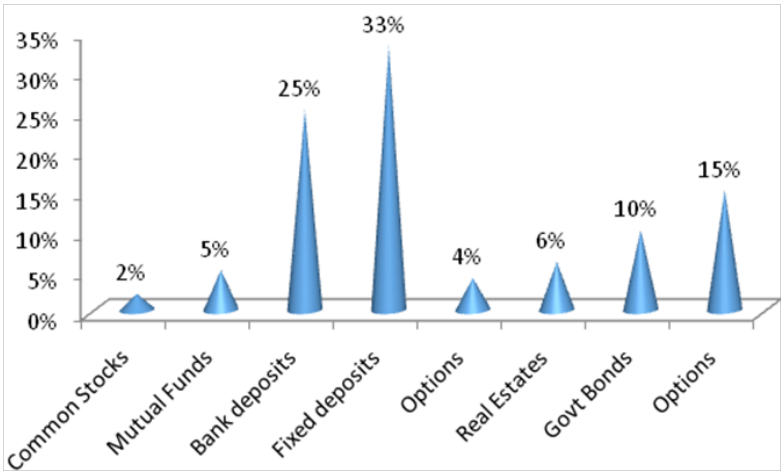


Interpretation

From the above table it is noted that only 2% of the entire population has studied till 10th standard and 5% of them have completed their +2 qualification and the second largest group belongs to degree qualification of 40% and also 49% the majority of the population belong to investors completed their master's degree in various fields.

Investment Avenues

Investment Avenues	Frequency (N)	Percentage (%)
Common Stocks	2	2%
Mutual Funds	5	5%
Bank deposits	25	25%
Fixed deposits	33	33%
Options	4	4%
Real Estates	6	6%
Govt Bonds	10	10%
Options	15	15%



Inferential Analysis

	Returns	Risk	Alternate Advise	Timely advise	Accuracy	Fees
Returns	1					
Risk	0.43	1				
Alternate	0.338	0.444	1			
Advise						
Timely advise	0.339	0.485	0.548	1		
Accuracy	0.252	0.453	0.307	0.451	1	
Fees	0.348	0. .372	0.358	0.489	0.378	1

Interpretation

Based on the above observation is it noted that the correlation matrix for the six examined constructs which were tangible features. According to the table all the constructs did not overlap with each other. Besides, there were positive correlations among all the constructs because none of the constructs had negative sign. In this study, the result has shown that there is a significant relationship between the robo advisory and the inventor's perception and the quality service of robo advisory.

Multiple Regressions Analysis

Model	R	R Square	Adjusted R Square	Standerd Errors of Estimate
1	0554 (a)	.307	.282	.47086

The above table shown that the R square is 0.307 for the regression of the investor's satisfaction is explained by the six independent variables which are mentioned above tables.

ANOVA Test

Model	Sum of Squares	Df	Mean Square	F	Sig
1 Regression	16.378	6	2.730	12.313	0.0009(a)
Residual	37.021	167	0.222		
Total	**53.399**	**173**			

There are two hypotheses that have been derived in this research study namely:

Tangible Features

H0: There is no positive relationship between tangible features and investor's satisfaction in services quality of robo advisory

H1: There is positive relationship between tangible features and investor's satisfaction in services quality of robo advisory. Reject H0 if $p<0.05$

Schedule

H0: There is no positive relationship between timely advice and customer satisfaction in services quality of robo advisory.

H2: There is no positive relationship between timely advice and customer satisfaction in services quality of robo advisory. Reject H0 if $p<0.05$

Conclusions

As a conclusion, this portion summarizes the entire chapter of this study. There are managerial implications that have helped the wealth management industry to make service improvement in order to maximize its business performance through the robo advisory. From the above results and the hypotheses testing, it is clear that investors prefer the robo advice more than the traditional advisory. This is because of fees, more accuracy, timely advice and also the clear valuation of the asset classes. Hence to conclude, these research portraits that robo advice is more accuracy and investor also prefer. Many researches can be continued in the same lines, further researchers can also think about pursuing research with many asset classes and portfolios.

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Accenture's report 'The Rise of Robo-Advice - Changing the concept of wealth management' https://www.scribd.com/document/329233363/Accenture-Wealth-Management-Rise-of-Robo-Advice Automation of a business process using robotic process automation (rpa): A case study

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Wealth management through robo advisory http://granthaalayah.com/Articles/Vol5Iss6/04_IJRG17_A06_330.pdf

Artificial Intelligence in Retailing: A Critical Literature Review

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Introduction

The retail industry has seen a drastic change over the last decade and is currently the most dynamic sector. The retail industry in India itself is expected to reach about US$ 1 trillion (The Boston Consultancy Group and Retailers Group of India 10).

The way retailers used to operate is changing quickly and the reasons can be attributed to the technological implications in the sector, newer business models, big data analytics, but still by and large consumer needs drives the purchase decision (Dhruv Grewala 1).

With growing millennial population and disposable income the demand for consumer goods has increased considerably and most of the youth- the tech savvy are resorting to online shopping. The e-commerce wing of retail industry is at its peak albeit, it contributes to a smaller proportion of sales when compared to the brick and mortar stores. According to (Retail touch points) e-commerce sales are expected to grow annually by 17% and reach $414 billion by the end of 2018.

Artificial Intelligence(AI)

According to (Jack) AI research is directed towards teaching computers to think for themselves and to improvise solutions to common problems. (Avneet 79) Describes AI as development of smart and intelligent machines and software that has the ability to learn, gather and importantly perceive the objects with the help of computation.

John McCarthy refers it as "the science and engineering of making intelligent machines." A few of the noteworthy applications of AI seen over the past few years have been mentioned in the table 1.

Table 1 Revolution in AI

Year	Revolution in AI
1990	Neural net device reads handwritten digits
1993	Robot Polly navigates using vision
1996	Deep Blue defeats the world chess champion.
1998	Robotic toy Furby learns how to speak
2005	Robot ASIMO serves restaurant customer.
2009	Google's first self driving car.
2011	Watson computer beats Jeopardy's
2016	AlphaGo defeats GO champions using.

Source: (Makridakis 47)

Many of the large companies have started adopting AI as they are able to see and gauge the potential of AI – Traditional companies like Walmart, Berkshire Johnson and Johnson(J&J) lack behind the Digital companies like Amazon, Apple and Google in terms of market capitalization and revenue per employees (Makridakis 54). The reason behind this is because the digital companies have been investing a huge amount in acquiring start ups and internal research (CB insights). The AI software systems and industry is expected to reach US$35,870 million by 2025 (Market Watch).One of the major fears of complete adoption of AI is huge unemployment, however a proportion of the critics have mentioned that AI may result in reduced middle range jobs, however there may be a huge demand for low and high end jobs that may end up in creating social inequality (Makridakis 58).

Retailing- Retail or retailing is defined as the sale of goods or services from a business to an individual for his/her own consumption rather than resale, the transaction itself can occur through number of different channels such as online, brick and mortar, direct sales (Shopify). With the changing lifestyles, shifting demographic characteristics many of the retailing firms are moving away from the traditional offline stores to online stores to cater to a new segment of customers who are tech savvy. With the advent of e-tailing technological advancements have exponentially increased. Retail is a rapid evolving process and business people constantly have to reinforce their mode of operation to react to new ideas/technology (Helen 44).

Artificial Intelligence in Retailing

According to (World Economic Forum 14) AI/machine learning can increase revenues through a profound understanding of consumer behaviour, while optimizing in-store pricing and assortments.

Artificial Intelligence's contribution in I) Merchandising and II) Sales Forecasting have been mentioned below.

I) AI in Retail Merchandising

Merchandising refers to the entire set of activities done to promote and sell your product once the potential customer is in the store (Business Encyclopedia). Retailers have huge amount of data and the companies who are able to analyze the data sets and generate favourable plan of actions are more likely to seal the deals (Antonio).Artificial Intelligence gives an automated conversion of business rules to a mathematical approach for product placing at any given shelf location (Cohen 1) .

The retailers are now experimenting with new techniques such as augmented reality, AI, robotics to push the retail market beyond the limits (Verma).

Few of the tools currently being used in Retailing are:

"Pepper, a humanoid robot has the ability to interact with customers and perceive human emotions. Pepper robot has led to the both rise of foot fall and sales in various stores. A store in Palo Alto, California reported a 70% rise in the footfall because of Pepper Robot. Pepper Robot is also attributed to 50% of Neo pen sales in Santa Monica."- (Faggella)

AI Chatbots

One of the most used application of AI in retailing is the use of Anthropomorphic Information Agents (AIAs)/chatbots to provide real time product information and engage the customers (Subramanian Sivaramakrishnan 61). According to (Subramanian Sivaramakrishnan 70) most of the e-tailers have an online chat option with a human representative. Despite the fact that AIAs are commonly used AI tool, according to (Jennifer Hill 245-250) chatbots have their own limitations as they are not able to have an extensive goal-directed discussion and offers very less history of shared experience. But still people are incorporating the use of AIAs because it is capable of holding the attention of millions of users (Jennifer Hill 245-250). However, with machine learning coming into picture a whole new range of chatbots are being developed that will have the ability to answer for more complex questions and think for themselves, will be deployed at retail stores in the future (Donaldson).

Virtual Assistants

The biggest group of users of the virtual assistants are the people between the ages of 25-34, representing 26.3% of Virtual assistant users (Verma). With 83 million population in USA and 400 million in India it is quite obvious the use of virtual assistants for shopping will continue to grow in the retailing sector. Over the years many virtual assistants combined with Artificial Intelligence have been developed to optimize the shopping experience of the consumers. Few are discussed as below:

Virtual Trial Mirror

Virtual trial mirror, a duality of Artificial Intelligence and Virtual Reality is now being readily adopted in many of the apparel, cosmetic stores. The virtual mirror enables the customers to try on different clothes without any hassle of getting dressed and undressed multiple times (Kumar). Raymond's store in Bangalore has recently started using virtual mirror which gives its customers a digitized experience and gives the customers a view of how the suit will look on them even before the suit is completely stitched (Venkat). Virtual Mirror has helped the retailers in improving the customer experience in the stores, helping the buyer buy right and moreover, the retailer gets valuable data about the trends, demographics and body types (Kumar).

Voice Based Shopping

Many retailers are trying to adopt the voice based shopping technology to follow the trendy virtual assistants. Walmart recently announced that it will enable voice shopping through Google Assistant (Verma).

II) AI in retail Sales Forecasting

Accurate demand forecasting is critical to boost the profitability of the retail operations and any inefficiency would either result in too-much stocks or too-little stocks, directly hampering the revenue and competitive position (Deepak and Christophher). Effective sales forecasting is necessary as it helps to anticipate production and material costs, as well as determine the sales

price (LeVee 12-16). Various researchers have developed methodologies for sales forecasting the notable methodologies have been summarised below.

Table 2

Author	Year	Methodology	Conclusion
Weigend, Rumelhart, and Huberman	1991	Back Propagation Neural Network (BPNN)	It gave the relationship between input and output historic sales without complete information, and effectively solved the problem of overfitting.
Tang, de Almeida, and Fishwick	1991	Box–Jenkins method	It was able to impact the international Airline passenger Traffic and domestic and foreign car sales in the United States.
R.J.Quo	1999	Integration of Artificial Neural Network (ANN) & Fuzzy Neural Network and Artificial Neural Network (GFNN)	Considered to be a reliable method for sales forecasting as it gave same results repetitively and includes a lot of variables such as promotional, seasonal factors.

Source: (Wan-I Lee 188-196) & (R.J.)

Traditionally most of the stores used to prefer Time series data methods to forecast their sales (Wan-I Lee 189). According to (Chase 15-17) time series methods are complicated because the relationship between sales and the past time series data, does not considers the seasonal, economical factors. The probable reason behind why people used these methods was lower cost and perhaps this method has been abolished as it failed to consider all the factors (Shih 227-236). Many a time decision-makers avoided using complex models and preferred to use their intuition and heuristic (R.J. 498).

R.J. Quo put forward a model which was an integration of Genetic Fuzzy Neural Network and Artificial Neural Network. This method is considered to give reliable results as it includes a lot of variables(promotional factors) and gives the same result repetitively (R.J.)

With the advent of AI in sales forecasting, sales team are able to forecast the close deal based on the common patterns for both individual and the entire market, Spiro's AI-powered sales automation CRM is one such tool which gives an honest and a statistically based picture of where the sales team stands (Honig).

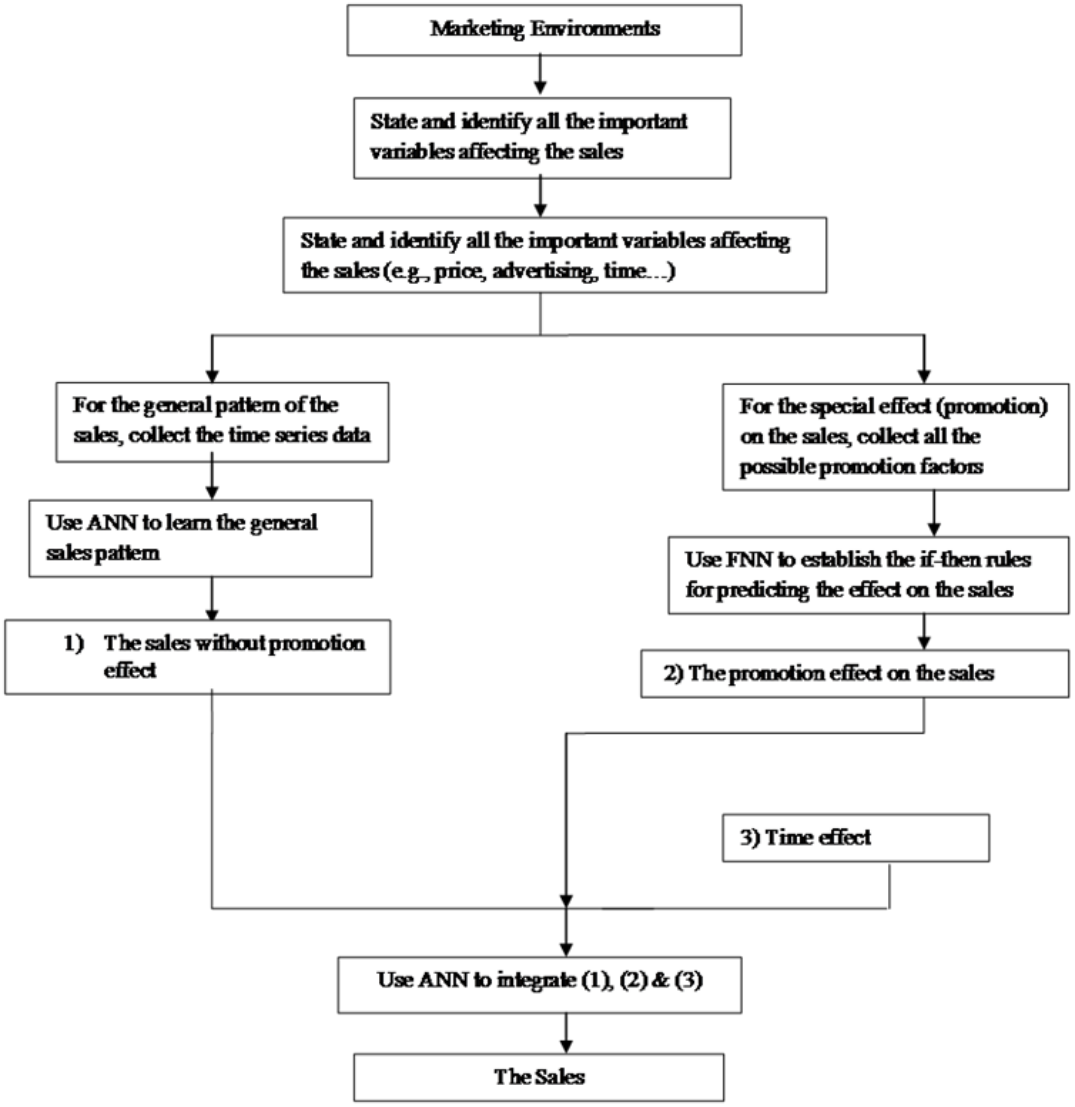

Figure 1. The architecture of the Genetic Fuzzy Neural Network (GFNN) forecasting systemSource: (R.J. 501)

Conclusion

A number of researchers have come up with their methodology for sales forecasting but very few retailers are able to use these theories effectively for implementation. There is still a huge scope for research in the field of sales forecasting, to develop a model which can be continuously reinforced with different variables such as market conditions, demographics, increasing per-capita income and location factors. In the field of Merchandising Artificial Intelligence has mostly contributed to fashion & apparel industry. Retailers are extensively trying to use Machine learning/ Artificial Intelligence for pricing by identifying price and sales patterns to facilitate smart and timely decision making. Retailers are trying to leverage Artificial Intelligence to improve product shelving, assortments with the data generated with every purchase.Owing to the prevailing market competition, globalisation retailers are adapting omni-channel retailing with Artificial Intelligence

becoming an essential part of the industry. Retailers are constantly experimenting with various technologies to increase their business intelligence quotient in order to improve the consumer experience. The main reason for adopting AI and related tools is customized shopping environment for individuals, which will lead to satisfied customers and fetch greater profits in the long run.

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A Study on Entrepreneurship and Innovation

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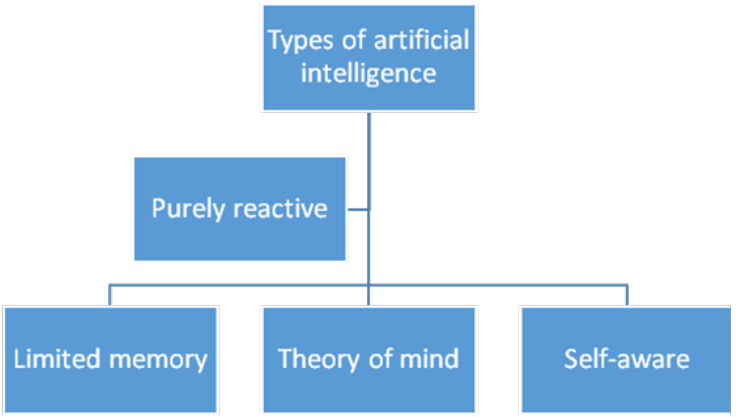
Introduction

According to **'The father of Artificial Intelligence'**
- John McCarthy

"Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to stimulate it.An attempt will be made to find how to make machines use language,form abstraction and concepts, solve kinds of problems now reserved for humans, and improve themselves."

Artificial Intelligence is a machine with the capability to perform activities and solve problems in a human manner i.e where a computer would automate a form of intelligence by learning to improve itself in solving problems and performing tasks.

Artificial Intelligence



Entrepreneurship

The ability to organise and manage business venture and to undertake risks in order to yield profits.

Innovation

'Living in an AI world'

From Siri to Alexa to Watson, we're living in an AI world, and the technology also affect the business and entrepreneurs. Innovation happens when you look beyond the obvious. It requires you to

identify better ways of meeting the needs of the people, some of which may not even be known to the people.

Innovation no longer remains a choice but has become an imperative. Innovation in Artificial Intelligence for an organisation is like a trump card in the game. It paves a way to a futuristic vision for the organisation and becomes a technology leader to face rapidly accelerating world.

Review of Literature

1. Name of the Authors - Kelly Fish, Paula Ruby

Published – International Journal of Entrepreneurship-13,2009

Many small businesses intend to increase their sales margin but may not have the adequate capital to begin with. Hence the entrepreneurs shy away from exploring global market.Thusartificial intelligence methodology opens up various opportunities in the global market for these small businesses to choose the right and feasible business.

2. Name of the Authors - Bo-hu-li, Bao-cun-hou, Wen Tao Yu

Published – Frontiers of Info Tech and Electronic engineering, January 2017

On the basis of the study into the application of artificial intelligence technology into manufacturing industries in the recent times, it can be analysed that with the rise in the artificial intelligence revolution there is a dynamic development of integrated technologies in the new era of 'Internet Plus Artificial Intelligence' which in turn has brought a substantial change in models means and the ecosystems of the manufacturing sector and in the development of artificial intelligence.

3. Name of the Authors –Prof Spyros Makridakis.

Published – International journal ,2017.03.006

The impact of the industrial and digital revolution has a vital effect on all aspects of our society, life, firms and employment. The study states about the various effects on forms and employment that would be considerable and leading in richly interconnected businesses with decision making based on the analysis of big data and greater, global competition among firms. The concern that would prove to be a challenge for the firms is using the Artificial technologies, providing several opportunities for both new products and services and thereby making productivity improvements.

4. Name of the Authors -Andrew Droll, Shanzad Khan, Ensanullan Ekhlas, StoyanTanev

Published – Technology innovation management 7(6),2017

The study states about the web research, to evaluate the growth and development of emerging technology start-ups and existing firms in the precision medicine sector. It considers the establishment of drug companies operating on medical fields and discussion focusing on their potential growth. It ultimately reveals that the existence of correlations would involve future work to include analysing the company's growth using techniques found in web content scraping, natural language processing and machine learning.

5. Name of the Authors-Ajay Agarwal

Published –Mckinsey Quarterly, April 2018

It conveys how Artificial Intelligence would be helpful in improving existing goods and services and by enabling automation of many activities to largely increase the effectiveness with which they are produced. However, it might have an adverse effect on the economy by rendering services such as new general purpose – 'new method of invention' that can remould the nature of innovation process and the organisation of Research and Development.

Objectives

1. To study the impact and the positive growth of the forthcoming Artificial Intelligence revolution.
2. Automate monotonous business activities.
3. To investigate the Innovation inartificial intelligence which are creating productivity opportunities for business and the economy.

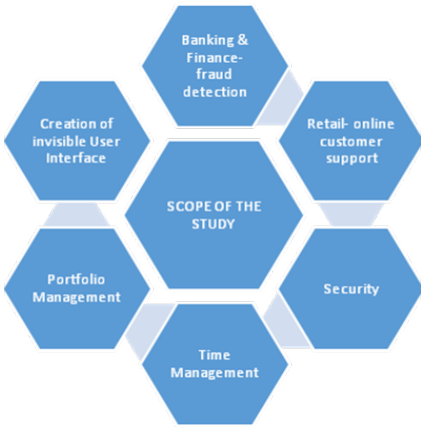
4. Reshaping of employment and the future of Artificial Intelligence.

Limitation

1. Time bound
2. Our research is purely based on entrepreneurship and innovation which does not aid any of the other sector.
3. A systematic search for the data was conducted based on the research papers published between 2009-2018.

Scope of Study

The study aims to investigate the implementation of artificial intelligence in the various fields of business ventures. Adoption of artificial intelligence is capable of automating business intelligence and providing all-inclusive end-to-end solution.



Banking and Finance-fraud detection

Various banks have accessed the help of artificial intelligence to detect fraudulent activities. The artificial intelligence software is trained to detect fraudulent and non-fraudulent transactions.

Retail-online customer support

Business reputation can be marred by its customer service, dealing with a huge volume of calls, complaints and inquires can be burdensome. With the use of chatbot, ones can easily manage their clients efficiently and appreciate prompt responses.

Security

Business security is enhanced with the help of artificial intelligence monitoring the malicious elements from getting access to the highly business sensitive database and information. Businesses in recent times, also use deep autoencoder networks and superior AI cybersecurity solutions for detecting fraud and ensure that their data is protected.

Time Management

Artificial intelligence can eliminate many monotonous and time-consuming tasks, thereby increasing the effectiveness, efficiency and productivity. It is convenient, which in turn helps the business organisation to pay more attention on imperative decisions.

Portfolio management

Artificial Intelligence have made investing effortless. It helps the stakeholders providing sound financial advices to balance the risk and to choose the right and preciseinvestment mix and policies. It helps in smart investing and nifty tracking of the investment assets, properties, stocks and funds.

Creation of invisible User Interface

It's the next vision of the future which is an allure in the AIworld. It helps in the personalization of the company's users and helps in pre-populated future interactions, it develops a new experience

and explore new technology. It also helps in

Statement of the Problem

"ARTIFICIAL INTELLIGENCE IS KILLING JOBS AND REPLACING HUMANS?" "On an estimation, 80% of the enterprise executive say AI makes workers more productive and creates jobs"

The greatest danger of Artificial intelligence is that people conclude to early that they understand it. Artificial Intelligence is poised to substitute tasks not jobs. Machine intelligence makes human morals more important. One of the significant concerns upraised against the upsurge in the use and advancement of Artificial Intelligence is if it will replace humans and whether humans will be underrated in the workplace. However, man needs to understand that instead of considering Artificial Intelligence as threat, one can learn how to use it as an opportunity to enhance their lives. Artificial Intelligence has the ability to increase the quality of the services while at the same time decreases the costs.Artificial Intelligence can also result greatly decrease our workload, reduce burnout and save hours spent on less vital tasks through automation.

As rightly said by Satya Nadella CEO: Microsoft – "Artificial Intelligence could create more jobs, not just eliminate them."

Research Methodology

We aim to provide our understanding on the basis of the collected secondary data and present our insights and understanding about the impact of Artificial Intelligence in the field of entrepreneurship and innovation as per the recent trends and statistics.

Data Analysis

According to Digiday, the artificial intelligence market is estimated to reach $5.1 billion worldwide by 2020. According to BCG study - India ranks third in terms of Artificial Intelligence implementation. The prime reason organisation currently seeks the help of artificial intelligence for - **48.5%- Automated communications**, which gives business speculators the information they can use to make efficient business decisions.

13.6% -Automated communications, gives customers data that can be useful to make proper decisions.

6.1%-Automation eradicates manual and reiterative tasks.

4.6%-Monitoring and alerts about the position of the business.

4.6%-Automated data- driven reporting

19.6%- All of the above

3%- Others

On the other hand, artificial intelligence as an innovation is widely used AI- powered solution with approx. 31.8% engaging voice recognition and response. According to estimates AI industry was USD 5 billion market place by revenue in 2015 and by 2020 there will be exponential improvement resulting in double revenue to USD12.5 billion i.e. it is expected to grow by 20% CAGR. "

Emerging market players show more courage when it comes to Artificial Intelligence and they keep identifying opportunities to apply the new technologies and improve them on an ongoing basis." - said study's author Daniel Kipper : BCG Partner and Global head of firms.

Artificial Intelligence offers expertise assistance, supplies chain network, enhances business opportunities and its rise resulting in gushing productivity which will branch a plethora of opportunities for the integration of the task forces and the man power.

Findings

- Paytm is all set to go global. According to reports its said to join hands with top investor Softbank to launch digital payment services.
- The National Health Services in the UK has employed an AI-powered chatbot which is a non-emergency helpline. The patients enter their symptoms into the app. It will, then, access a large medical database and the patients will receive personalized responses based on the information they have entered.
- General Electric is a very good example of a large multi-faceted conglomerate that has implemented AI magnificently at a large scale, across severalroles, to develop from industrial and consumer products leading to 'digital industrial'. General Electricals procurement and integration of innovative AI start-ups such as "SmartSignal" has successfully show casted artificial intelligence for its rapid growth.
- Amazon's AI-powered voice assistant Alexa is surpassing the industry standards to retail-to-technology and has turned out to be a highly successful innovation in the modern era. Amazon revealed that Alexa had "far exceeded expectations" in 2017, and it contributed to the firm's 38 percent revenue growth.
- Intelligent personal assistance – they use location data, user input and a series of database information to perform requests from both voice command as well as text. Google's duplex is now improving at a greater pace, nearly exquisitely replicating human voice and conversational navigation.
- The intelligence explosion is a possibility outcome for humanity building artificial general intelligence. Artificial General Intelligence is competent of recursive self improvement leading to meteoric emergence of artificial super intelligence, the limit of which are obscure.

Conclusion

"Artificial Intelligence is in a 'golden age' and solving problems that were once in the realm of sci-fi." Entrepreneurs of today are best prepared to face the challenges of the dynamic growth of artificial intelligence which acts as an intangible asset and a means of bridging the innovation gap and heading towards the creation of a utopian future.Artificial Intelligence evolution is being piloted by exponential growth. When the obsolete patterns are broken, new worlds emerge.

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A Study on Artificial Intelligence in Banking Innovation" - Indian Banking Tomorrow with Today's Thought…

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Abstract

In the world of Artificial Intelligence (AI), banking has not limited itself to fewer banker operations but has evolved itself to the changes surrounding the ease of doing Banking Business. From complicated paper works to digitization of records within second with the help of ATM, Cash Deposit Machine(CDM), Passbook machine, Card less transactions, Fingerprint Banking Mobile banking, E-banking and Internet banking etc...Enabling faster Transaction and transparency at high level. Thus offers a number of perceptions on what we see today and how did we get here? What is currently significant? And what might be the future of banking Industry? This paper investigates the new age banking with the progressive innovation of artificial intelligence in banking sector as challenges and opportunity, labor forces replaced by robotics and AI potential to impact the Banking sector. The researchers try to study the impact of AI with the help of Banks which have already developed AI system in their operational management through Secondary data i.e. Journals, Research papers, Articles, Case studies and publications cited from the year 2015 to 2017. To analyze such a large number of scripts, text mining technique is used and also using a dictionary of terms belonging to both banking and business intelligence domains.

Keywords: Artificial Intelligence (AI), Banking Business.

Introduction

Technology as a driving tool has increased the efficiency of business with the concept of Earth as Global Village for operations. The rapid growth of science and technology has largely had its effect in the field of Healthcare, Manufacturing, Customer service, Finance and Banking sectors. Factors such as managing huge data from ever growing population, transaction across globe are few driving forces to adopt AI in business. While AI has made ways to overcome conventional way of doing business in the above sectors. Banking with AI has proven to be time saving by 60% and efficient by 100%, that's a win-win Situation to both banker and its customer proving them to change the dimensions of handling business. Assistance to do more with little - From the manual entries to the digital accounts, From money transfers to SWIFT.

Artificial Intelligence (AI)

In concept, Artificial Intelligence (AI) has been around from 1950's, ever since John McCarthy defined it as "the science and engineering of making intelligent machines". It has evolved itself from simple Chess games to the Voice assistance model today in Cellular phone. Today, there is widespread application of AI as the hottest trends for 21st Century. Ever since its innovation it has been a debatable topic on –"Can Computers think, act, react, and respond to certain inputs - While less debates on what AI actually means". That is because the application of AI is widespread from Simplest of Cellular phone voice assistance (Apple Siri, Google Now) to the Experiments of Driverless cars or the Restaurants run by Robotics fall under single Umbrella. This point of view on Banking Business refers to Artificial Intelligence is an area of computer science that replaces the use of mankind by computer programming software which can enables to perform functions of human, think and respond back.

Ex: AI in assisting the ATM operations.

Banking Business

Time with trade has changed the system of dealing with business while barter system replaced by trading with gold coins and further replaced with Currency. The trading with most popular currencies across globe lead to the requirement of efficient banking system. Banking is a financial undertaking dealing with Borrowing and lending functions at large, products like saving bank account, loans, and credit offerings are very common in nature. The operation of banking has evolved to the need of the present day with commercial banking operations and investment banking activities dealings with businesses. Development of special banking software and customized banking has grown along science and technology. Banks are often referred as the backbone of the economic development of the country. Banking sector in India has a potential growth and is expected to be the 5th banking Industry in the world by 2020 and 3rd largest by 2025. The banking Industry is currently worth Rs. 81 trillion (US $ 1.31 Trillion) with 26 public sector, 20 public sector bank, 43 foreign banks along with 61 regional banks and more than 90000 credit Cooperative banks.

Objectives

- To study the concept of AI and driving factors for adoption in Banking.
- To study the impact of AI in banking sector.
- To Understand AI as challenges and Opportunities in Banking

Review of literature

1. Meryem Duygun Fethi and Fotios Pasiouras, in their paper Titled "Assessing Bank efficiency and performance with operational research and artificial intelligence technique: A Survey". This paper gives a comprehensive study of 196 data observation which comprises O.R (operational Research) and AI (artificial Intelligence) which assess banking performance. It also speaks about credit worthiness and underperformance in bank. It also talks on techniques such as Neural Network and support vector machines.
2. Ankith Kesharwani Shailendar Singh Bisht

"The impact of Trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model" it aims at understanding the technology acceptance model in relationship with net banking in India. It gives an insight about behavior intention of net banking negative impact on perceived risk

3. Avneet Pannu, Paper Titled "Artificial Intelligence and its Applications in Different Areas" it explores opportunities in empowering AI, the growth of artificial intelligence in last decades in various sectors with the overview of technology in application of business sector and service industry

Limitation

- Lack of time frame study.
- AI is a multidisciplinary study while this paper is only limited to Banking sector.
- Restricted to limited Geographic study (Indian Banking system).

Research Methodology

The researchers try to study the through Secondary data i.e. Journals, Research papers, Articles, Case studies and publications cited from the year 2015 to 2017. To analyses such a large number of scripts, text mining technique is used and also using a dictionary of terms belonging to both banking and business intelligence domains. Descriptive and Conceptual research method is adopted for the study.

1. Factors Influencing AI in Banking Sector In India

Low Processing Time

AI will illuminate major time taken for processing a particular transaction in a given time with low human intervention 60 % less time consumption and 100% accuracy.

Case Study

SBI has adopted an AI called Payjio, developed by SIA a technological based startup in Bengaluru. According to the study Payjo has responded to Million Queries from People across the Country accounting to 10000 enquiries per second or 864 million in a day. This is 25% of data managed by Google every day.

Progressive Banking

It helps the customer in answering to their regular Queries with lesser TAT (Turnaround Time) and increased efficiency.

Case Study

The AI developed By ICICI Bank help customer resolve FAQ, which are simple structured frameworks developed through responses received from customers. Bot, the AI software gives the correct response and it learns along the way saving the executor's time by 40%.

Conveseranational Banking

Introduction of AI which can respond back to the task performed or assist the customer in carrying out their banking operations has evolved with time making way to Conveseranational banking at a large.

Ex: Voice Assistance, support by AI in Banking operations.

Case Study

With the launch of "EVA" the AI system in Axis Bank has enabled the bank to develop Conversational banking app helping consumer with both financial and non-financial products, Answers to FAQ, processing of Loan and other products. Currently the app is available on FB and Axis bank Web Page.

24/7 Banking

Machines the tired less inventions of the human era with unmatched efficiency and time taken to perform have always been proven right. The ability to function round the clock has drawn AI as future in Banking Arena.

Case Study

To help service the customers round the clock, Axis bank has implemented AI across 125+ Process across the country. Robotic Process Automation (RPA) is complete for most process, which includes support in financial segment as well i.e. loan disbursement, bulk process and ATM Support along with Voice assistance.

Security (Fraud Detection

While Banks deal with money, safety and security is given a top priority by both the banker and its customer. AI currently is introduced in financial services as a fraud detector such as fake cards in operation, improved machine learning and big data to be managed via AI. It also enables fake call dedication and more.

Banking Technology

The rapid growth of science and technology enabling next level banking with AI has improved machine level learning and improved customer satisfaction, especially in customized banking with great back office data management efficiency. The Previous year Banking in India has seen adoption of AI for conversational banking, automation of underwriters in financial products, web and device with fingerprint process, paperless banking etc…

Case Study

DCB bank becomes the First Indian Bank to adopt Aadhaar based banking; it launched its operation in April 2016 followed by SBI, IDFC and others with the influence of AI.

Better Computing Power

Introduction of machine, replacing manpower at large has been effective in managing data at various ends and been proven to be efficient in managing time by 100 %.

Case Study

HDFC with the launch of EVA, the AI software the customer can obtain information about its products and services on real time basis. It removes the need of searching of data or obtaining such data through call. EVA will also help in handling real banking transaction. It will also complement upcoming digital platforms in exploring Digital Banking.

Cost Optimization

The element of profit is not just sales but also through cost minimization. AI in the areas of Unified Payment Interface (UPI) has leveraged the growing presence of banking through online platform such as M-Banking, I-Banking and more. Reducing the cost of Infrastructure for Financial Institutions.

Case Study

With the raise in smartphone users, mobile banking and e-wallets it is expected that smartphone user base to expand from 150+ million users currently to 500 million users by 2020, Introduction of products such as RuPay Cards by National Payment Corporation Of India (NPCI) which will allow real time money settlement for convenient experience of the customer, it is a foundation for Digital movement in India.

2. To study the impact of AI in banking sector

Customer Service

While customer service is the key to long term profitability and sustainability, the dynamic market has enabled customer with various choice making in choosing related products by different bankers while banks are adopting innovative systems such as AI to perform their regular banking activities attracting customer retention at large.

Observation

The introduction of AI in machine learning helps in new features to the customer such as how to perform a certain task, How to reset ATM pin, which is advanced with banking.

E-KYC and onboarding (Robotic Process Automation)

The RBI has legalized Aadhaar based banking which enables the banker to assess his/her account through biometric authentication, opening of banking accounts through e-KYC and banking Correspondent (BC) location. It is noted that time spent on SB accounts and Current account opening has reduced by 90% and 92% respectively.

Case Study

IDFC bank has become the first bank to Launch Biometric-Based payment through Aadhaar Pay, it aims at providing onboarding between 50,000-75,000 merchant to the enroll with 1,00,000 as target in 3 years.

Risk, Credit and credit rate scoring

Risk is the element of uncertainty involving multiple obligations at different levels such as operational risk, credit risk, market risk, business risk, liquidity risk etc… To negotiate such risk AI has become more efficient in understanding current banking needs and to mitigate risk.

Case Study

Axis bank with adoption of AI has developed Robust credit Risk model, evident from the fact that 80% of the suspicious transaction are free. 5% customers are identified as High risk by the introduction of AI-enabled neural network.

Real time Feedback from customers

SBI with the help of its AI Powered smart cameras that can capture facial expressions of a customer to understand the satisfactory level of Customers to offer a real time feedback on the usage.

3. To Understand AI as challenges and Opportunities in Banking

Digitalization of Banks

With the Effect of Govt. policies such as Digital India, Startup India, Jan Dhan Yojana and Aadhaar Card as mandate promoting digital banking system in India AI has a greater role to play as Digital alternatives. While the ROI in India for FinTech Project is 29% the highest in the Global Economy with 20% as Global Standards.

E-payment gateway

While Digital payment sector in India is growing and estimated to grow with the need and the emergence of Mobile payment solution and E-Wallets and P2P transfers, POS, One stop-shop solutions it becomes both challenge and opportunity for banker.

User Adoption (Employees)

With the effect of Machine Learning influenced by AI, which will replace huge manpower Resources with Machine Learning and programming at large. This is a potential threat to the employees of the organization.

User Adoption (Customers)

India is a Rural based country with 70% population living in villages, while 30% live in Urban settlements. Beside the population division, illiteracy, lack of access to banking, traditional way of saving money in homes, diversified geographical location are the major challenges for banking.

Finding and Suggestions

- Adaptation of AI with lack of Human Touch is a barrier in the Indian Banking sector.
- It is estimated that 80% of economic transactions in India still happen through cash, as

opposed to around 21% for developed economies
- AI in Banking sector stands in 8th position due to lack of maturity
- AI in banking to increase in next 12 months.

Conclusion

While India is still a Developing Economy, Adoption of technology such AI in Banking does not wait for maturity for its adoption. The raise in population makes ways to huge data and data management without the adoption of AI will be costly, time consuming and less efficient. AI has to sail a long way in banking to reach out its large audience in diversified country like India. Factors such as strong Govt Policies, growing business environment and rapid growth of science and technology will make ways to adopt of AI in Business sectors.

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The Changing Face of Marketing: Role of Artificial Intelligence in Shaping Consumer Experience

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Abstract

The human existence has been shaped by numerous discoveries that have benefited and at times even challenged the human race. Humans have excelled in creating things that have challenged its own imagination and hence justified the title of being the most intelligent species. History is testimony to the ways Steam Power, Electricity and Information Technology has impacted the human kind. The next revolution that is taking place, silently but at a rapid pace, is Artificial Intelligence (AI). The late physicist Stephen Hawking said that the success in the field of AI will perhaps be the biggest achievement of the human mind, but also warned of the possibility of the termination of the human race if we lose control.

There are many who believe that the human race will keep control over AI for many years to come and can reap significant benefits from the use of it. There are also significant others who are skeptical about the coexistence of the creator and its creation. Irrespective of the opposite schools of thought, AI has already started making significant impact on various aspects of life and is on its way to perhaps become the biggest disruption. We have witnessed so far. The aim of this paper is to trace the evolution of AI and look at the ways it's impacting the field of Marketing. The authors look to present a layman's understanding about AI's role in marketing and perhaps throw light on its probable future applications without inclining towards any particular school of thought.

Keywords: AI, Evolution, Technology, Marketing, Consumer Engagement, Experience

Introduction

What is Artificial Intelligence?

Artificial can refer to anything that is not real; it is something that's fake because it is simulated essentially. Intelligence however is a more complex term. It can be things such as logic, understanding, problem solving, creativity, etc. We call humans intelligent because they exhibit the traits mentioned and we can say the same about plants and animals. Now machines, computers, and robots are said to have "Artificial" intelligence as they mimic or simulate the

intelligence that we human beings possess. AI has been prevalent in several works of fiction and imagination throughout the years.

Artificial intelligence was a discipline founded in 1956 and was followed by huge waves of optimism and funding and then a stagnation period known as the AI Winter. Recently however AI has picked up again and has been making great sides.

Artificial intelligence has had big impacts on the human race as a whole from increasing workforce efficiency to making our lives easier and more comfortable.

In just the 2000's itself there have been several notable events that have been great leaps in the field of AI

In the year 2000 we saw expressive robots such as "Kismet" capable of facial expressions just like human beings. The Nomad robot too was unveiled which scoured Antarctica looking for meteorite samples.

In 2002 iRobots Roomba was introduced. The first robot to enter the household. It could autonomously vacuum floors and avoid obstacles.

In 2004 NASA's robotic exploration rovers Spirit and Opportunity autonomously navigated the surface of Mars.

In 2005 we had Honda's Asimo robot which could move just like a human being delivering trays to customers in restaurants. Recommendation technology too came into the foray and we saw Tivo providing show recommendations to customers thus AI entered the field of marketing.

In 2007 we scientists in the University of Alberta taught AI to play checkers and DARPA launched the Urban Challenge for autonomous cars to obey traffic rules and operate in an urban environment.

And in 2009 Google built the first autonomous car

In 2010 Microsoft launched the Xbox Kinect which could track human movement. It was a very successful motion tracking project.

In 2011 IBM's Watson computer defeated television game show Jeopardy! Champions Rutter and Jennings.

From 2011-14 we saw that AI assistants like Siri, Cortona, and Google Now came into the picture.

In 2015 an open letter to ban development and use of autonomous weapons was signed by Hawking, Musk, Wozniak and 3,000 researchers in AI and robotics and Google's DeepmindAlphaGo bot beat the best in the game.

In 2017 AI learned to play an even more complex video game Dota2 and beat a leading champion in a 1v1 game and an even more advanced version of the bot that beat ranked players in Go was released.

In 2018 AI again beat humans. Alibaba language processing AI outscored top humans at a Stanford University reading and comprehension test and finally Google Duplex was launched an AI assistant that could book appointments over the phone. It is nearly flawless and indistinguishable from human speech.

Implications of artificial intelligence on businesses

Artificial Intelligence is the future and it is here to stay but what implications does the growth of Artificial Intelligence have on businesses?

Several authors together including Mike Baccala, Chris Curran, Dan Garrett, Scott Likens, Anand Rao, Andy Ruggles, Michael Shahabad several other contributors have made some bold predictions in a paper named "2018 AI predictions 8 insights to shape business strategy"

The authors claim that Artificial Intelligence will affect employers long before they will affect

employees. Artificial Intelligence and human beings will in most cases work in tandem with each other and not against each other. This fact is enumerated with the example of high level chess players being beat not solely by Artificial Intelligence programs but by "Centaurs" i.e. a combination of efforts between AI and humans where decisions made by the AI are free to be overridden and analysed by the human being anytime.

AI will eliminate the need for menial and repetitive tasks in several industries and economies. This however will also allow individuals to focus on more pressing and important work. Even then in PwC's forthcoming international jobs automation study, due in February 2018, it is estimated that across 29 countries analyzed, the share of jobs at potential high risk of automation is only 1 percent by 2020.

Employees in this new day and age will not only need how to choose correct algorithms and how to feed data into AI programs but it is also essential that they understand how to interpret results and come to conclusions. AI will also change how the employees work in teams. Different departments will be required to work together in close collaboration with each other to solve problems and later monitor the results.

67% of executives have said that AI will help humans and machines work together to be stronger using both artificial and human intelligence. (PwC Consumer Intelligence Series: Bot.Me, 2017 Base: 500 business executives)

54 % of business executives say AI solutions implemented in their businesses have already increased productivity (PwC Consumer Intelligence Series: Bot.Me, 2017)

One area that AI already shows superiority over human beings is hacking and we will see in the future that AI will be a very powerful cyber threat as well as a powerful cyber defence.

Already, scalable machine learning techniques combined with cloud technology are analyzing enormous amount of data and powering real-time threat detection and analysis. AI capabilities can also quickly identify "hot spots" where cyberattacks are surging and provide cybersecurity intelligence reports.

The winner of the US Defense Department's DARPA Cyber Grand Challenge, a cybersecurity competition, used AI deep learning—and the Pentagon has purchased the technology.

Even then humans are better at some tasks than AI such as absorbing context and thinking imaginatively and will stay play big roles in preventing and protecting against cyber threats.

We will see in the future that perhaps this potential threat from AI will help speed up the process of acceptance of AI by organisations as they are a highly potent defence. We will see organisations investing and taking up AI to protect them and help them perform better.

27 % of executives say their organization plans to invest this year in cybersecurity safeguards that use AI and machine learning (PwC 2018 Global State of Information Security® Survey Base: 9.500 business and technology executives)

We will also see in the future there will be a great need for accountability, explain ability , and provability. Therefore Opening black boxes will reduce certain risks and help establish stakeholder trust. Transparency is essential.

Implications of Artificial Intelligence on Marketing

Artificial Intelligence can help with marketing and digital commerce and has several benefits including increased accuracy, improved efficiency, more granularity inanalysis and orchestration, the ability to deal with large amounts of data with different attributes, and even frequent algorithm refreshes to capture transient changes in customer and market behavior. It should also be noted that although AI can help with all these things it should not be misunderstood that AI can solve all problems and is a cure all.

Now here are the ways in which AI can help assist in marketing and digital commerce operations-

Businesses can personalize their interactions with customers using data collected by presenting the right contents and formats. With AI personalization engines can quickly discover the correlation between customers attributes and observed activities. AI then can provide content from several different sources factoring in large number of attributes to truly provide a proper personal experience.

There are several ways in which AI can provide a personal touch

AI making use of data provided can be frequently tested and improved to provide customers proper product recommendations based on several attributes such as demography, behavior, preferences, etc and can continually learn and improve. AI can factor in multiple data sources to understand consumer behavior and provide a much better search experience. Thus helping business increase the conversion rates. Solid Signal for example by incorporating this technology doubled its conversion rate to 6% and minimized its exit rate by33.5%.

AI can even gather information about a consumer and provide the appropriate landing page for them to ensure that the best impact is made on them. AI can even help make some tasks easier. AI can group different products based on their attributes and characteristics and since AI can access huge amounts of data it can be very proficient in demand forecasting.

Furthermore, AI can effectively identify fraud much faster than rule engines eliminating that threat and thus helping out managers. Another way AI can help is with Inventory management. AI can understand the ideal location, stock availability, distance from customer, and other such factors and help with efficient and effective inventory management. By considering a wide variety of factors such as cost, inventory, margin, etc AI can provide dynamic pricing too and by analyzing consumer behavior AI can identify those consumers who will be more responsive to loyalty programs, marketing schemes, etc.

Conclusion

AI will have a huge impact on the way we live our lives. Each and every routine task will be integrated with this new technology. Business and industries need to realize the need and benefits of AI and should start planning to adapt it for sustain in the future market. But over reliance on technology, people could become disconnected from the process and cease to understand how things work. Also AI is going to bestow success to the business, with better understanding of customers and relation with them. However more than replacing humans, a combination of AI and humans is more going to benefit the business.

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An Invasion of AI in Retail Sector - "Staffless and Storeless"

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Abstract

Retailing industry in India and all over the globe are experiencing the vibrant changes with respect to advent of technology. Artificial Intelligence (AI) also the one new emergent technology invaded in to the Retail industry to provide upend and most luxurious experience in shopping world to every shoppers. This AI technology enhances the retail world both in online as well as in offline. In helps the retailers to provide a new shopping experience to the customers by providing huge sum of valuable information at one point. The shoppers also have a chance to enjoy the technological advent with personalized excitement. It is expected that 50 percent of the retail companies will adapt to cloud-based services in the coming years that will look after their Big Data and analytics, ensuring a smooth process, reduce costs and increase flexibility. Staffless and Stockless are the natural evolution for retail outlets. Through Artificial Intelligence, businesses of all types and size will save thousands per month. This conceptual research paper analyses the need for changes in the retail industry in AI era. It narrates the way to extend these changes benefit the retailers to do their businesses effectively and efficiently and the consumers to get retail experience and gained out of it. Finally a model was constructed to depict the retail industry transformation through AI technology to engrave the benefits of retailer and shoppers as a whole.

Keywords: AI, automation, retailer, staffless, storeless

Introduction

The retail industry is always has a thrust to engrave in its way of selling be completely aligned with the advent of technology. The retail world is considered to be the biggest platform where many number of aspirant and potential customers are frequently visited to fulfill their personal requirements through shopping. It is mandatory for the retailers to provide valuable information in an adequate manner at timely way that too in a personalized manner to attract and retain the loyal customers under the hectic competitive and big data arena. Now-a-days the shoppers like to prefer the retail store at their own ease and assuring pleasure in shopping through personalized way under technological advancement. They like to experience the shopping at most comfortable way like living room experience. They

are not ready to spend their valuable time just for searching the articles and physically engaging themselves in to shopping. All these expectations are fulfilled and the customized services can be offered by the retailers can be possible only with the most advanced technology like Artificial Intelligence.

According to the report of Infosys (2017), Retail sector has invested more amounts for supply chains to become more web-centric and the variety of technologies including Artificial Intelligence (AI), robotics, logistics automation, data analytics and self-service technologies in an effort to become more competitive, more customer-centric and more responsive demand and opportunity. Amrita Nair-Ghaswalla (2018), retail giants such as Amazon, Walmart and Starbucks and other brands are rapidly transforming the retail industry through technology advancements, and these are turning to augmented reality, facial recognition and virtual apps to boost their marketing. AI facilitates the businesses and consumers will get benefitted from reduced costs, improved efficiency and more choices. This is the age of 'always on' consumers, who is changing faster than ever. Consumers expect connected and seamless experiences that make their lives easier. Emerging technologies in retail sector facilitate to deliver richer in-store experiences. Staffless and Stockless are the natural evolution for retail outlets.

Research Problem

In Indian Retail industry, the adoption of AI technology is not yet completely being happened. Till today, the invasion of AI in Indian retail sector is viewed as emerging technology. With the solicited features and comprehensive technological advancement will help the retailers to customize their offers to cater the needs of individual shoppers in India. By observing the tendency of retailing industry in a highly literally populated country like India, it can be easily judged even by a layman, the invasion of AI in Indian Retail sector cannot be postponed, this event will happen very shortly. In a globalized economy, India evidenced with the high young literate population having thrust to adopt any new technology in a massive successful way, so AI also inevitable from this history. Currently retailers are cater into the digital retail scene could fundamentally alter the way people engage with retail products and service, finally there is a million dollar question in the minds of retailers is that 'Will it helps to reshape the cost dynamics of retail stores?'.

Research Objectives

The main objectives of this research are

1) To analyse the recent technological changes in the retail industry.
2) To study the invasion of AI technology in Retail industry.
3) To evaluate the staffless and storeless concept in Retail Industry.
4) To develop the conceptual model for retail transformation through AI technology.

Research Question

There are many reasons for the retailers to cope with the technological changes. In U.S, over 6,700 retail stores have been closed in 2017 because of emergence of e-commerce and rising labour cost. Around 29 states in the U.S have adopted minimum wage system higher than the federal minimum wages. In the retail sector, shrinkage due to shoplifting, employee theft, paperwork errors and supplier fraud are hard to fight. On the other side, consumers are demanding better, more innovative ways to shop and stores cannot keep up. Recent survey of Adyen & 451 Research (May 1, 2018) revealed that U.S retailers lost $37.7 billion last year due to shoppers not wanting to wait in line, 80 per cent of shoppers have walked out of a store because of a line and 75 per cent of shoppers would shop more in-store with a "just walk out" payment experience. It was realized that

the major cost constructive fields in retail industry are Staff, restocking, and real estate. How could the gaps be bridged with the advent of AI technology to serve the customer better?

Theoretical Framework: Emergence of AI in Retail Sector

Artificial Intelligence is a smarter concept of machines being able to carry out human tasks that is considered intelligent while Stanford University defines Machine Learning (ML) as the science of getting computers to act without being explicitly programmed. AI and ML are often used interchangeably. However, they are different concepts used very frequently around subjects such as Cloud computing and Big Data Analytics. Among all sectors, the wide-ranging use of AI in retail sector is creating most buzz. Streamlining the retail processes and allowing online experiences to resemble human interactions is helping the digital retail to make a rapid progress. AI is now capable of analyzing, respond to and even predict customers' questions and even behaviours, with a great potential for streamlining the way consumers discover and interact with products. Adoption of AI tools will certainly lead to increased accuracy and timeliness over conventional retail systems. Several companies are using AI, it can be safely assumed that while AI is a new technology being used by a lot of start-ups, how they use it and what they ultimately deliver is the key.

As recent independent research conducted by Infosys (2017) in global retail sector found that retailers have been using AI systems as part of their operations for an average of two years, with 44 per cent using AI technology in between one and three years, with a further 20 per cent actively using AI for over five years. Overall, 87 per cent of retailers surveyed have deployed some form of AI or automation technology as part of their operations and decision-making processes not just or data analytics, but to actually automate decision-making and guidance for human decision makers.

Staffless and Storeless– A Retail 2.0 Experience

Staffless is a form of organizational structure where the system allows unmanned or semi-manned retail stores. The staffless retail store is an automated retail system that allows convenience store operators to remove all or most of the labours while significantly reducing theft. Unmanned store allows the customer DIY (Do it Yourself) shopping. A mobile phone with new app can be used to take care of scanning and paying for items in staffless retailing. The staffless system eliminates labors (except stocking) and allows the customers to enter the store through a retailer's mobile app loaded with their ID and Credit Card information which connects to a Smart Lock. Someone can only enter the store if they are provided with legitimate ID. The retailers can realize who are the customers are entered in to the store and available inside therein. With the stores experience, customers can just scan anything they wish to buy with their mobile device, place the items in their bag and walk out; there is no longer a need for a human to ring them up. When there are in staffless store, they are monitored by cameras that have surrounded with Artificial Intelligence back end. If a customer unknowingly places the unscanned articles in his basket, the AI technology alerts the shoppers and automatically add the bills to the shopper's card. If the same was intentionally happened, then the particular shoppers will be blocked to do further transactions in the retail shops.

Staffless system has been working in Europe for over a year in a number of different stores. The Moby Mart - a Sweden based retail sector has initiated this staffless process, where the registered customers swipe a QR code on their device for their shopping activity. Shoppers scan groceries and other items into the app for making purchases, and as they leave, the store automatically charges their credit card. Currently there is no sales representative on staff, engineers at Moby Mart. It is functioning with artificial intelligence powered holographic shop assistant to help with purchases. Chinese retailers, such as Alibaba, have already initiated smart stores that use machine learning, biometric recognition, and sensors to track customers, their purchases through mobile payment

systems, such as Alipay and WeChat Pay. China is in a way ahead in presenting this autonomous shopping experience and several more smart stores are expected to start in China over the next couple of years (Pragati Verma, 2017). BingoBox, a 24-hour cashier-free convenience store that just raised $14 million plans to set up 5,000 smart stores within the year 2018.

Stockless

The most significant exercise for physical retailers is restocking and managing inventory. Unmanned stores offer more cost-effective and efficient ways to restock. Instead of human employees, retailer use sensors and data analytics software to track inventory. When stock runs low, the self-driving vehicle can simply return to the warehouse to replace the entire shelving unit with a full one. Cromwell (2017) uses this model which is much cheaper to run especially in prime real estate locations. "With a one-time investment in a mobile store, you don't need to worry about growing rents denting your margins," he added. Recently, retailers are restructuring their operations to embrace automation using robot. The robot maneuvers freely around the store, looking for out-of-stock items. It then reports data to the store's backend operations to replenish missing items. Real time information are provided to robot to make easier for people to do their jobs and keep shelves full for customers. The ability to collect real-time information about products and customers using Internet of Things (IoT) and data analytics, could open new opportunities for retail stores that must compete with the growth in online shopping.

"Technology can change the game for offline stores. Smart, physical stores will be able to minimize friction in buying and create a personalized experience which, until now was only available online" (Cromwell 2017). Big data analysis are considered as the major technology support the retailers to observe the present behaviour of the customers, gather the shopper's history at every transactions, stored that information and used the same to predict the future sales level of the retailers. Sometimes, with the huge volume of data, the retailers can even able to predict the futuristic demand for them through data mining technology. It will also help them to capture the shoppers through customized deals and offer valid suggestions for their requirements. Some retail world use the AI technology to give the shopping experience only with their mobile phone by providing the scanner facility for every object they deal with, through the authenticated app developed and delivered by the concerned retailers the shoppers simply scan the material they like to buy will automatically added in to their respective shopping baskets and the money also be debited from their concerned bank account through debit/credit cards. The other retailers attempt to provide OMNI channel retailing through merging too many retailing strategy under single basket.

A Sweden based Moby Mart is the first autonomous staffless mobile store (2017) turning every parking space in the world into a potential new 24-hour store, automatically prepares to restock when running out of important items. There is no need for moving goods from trucks, instead the entire store will run back to the warehouse to restock or even dock with other Moby Marts to refill. The cloud knows where they are, it can help them find a place to meet and exchange products. Stockless store can be operated either manually or controlled by remote as well. The shopping experience is programmed by a virtual assistant who receives each customer.

VNTANA and Satisfi Labs in Los Angeles (September 2017), Leading Augmented Reality hologram company have announced a new platform that will allow businesses to develop a hologram concierge to be used in business (Tom Ward, 2017). The company has launched the first-ever artificial intelligence hologram concierge for retail, sports and hospitality. The project fuses artificial intelligence (AI) with augmented reality (AR) technology to produce a 3D persona that can interact with customers. The industry-first experience allows the hologram to react and respond to consumers' questions without the need for wearables or a touch screen device while

collecting data on the consumer. The hologram concierge is powered by VNTANA's patented hardware and software that projects an interactive 3D persona who answers questions based on Satisfi Labs' custom AI said by Ashley Crowder, VNTANA's CEO and co-founder. In this cloud based technology, all the information are stored in cloud, which will benefit to identify the diverse tastes of consumers and big data analysis on general customer behaviour with knowledge about the tastes of individual customers, helps to predict what products will sell at what places. Stockless system provides safe and reliable environment for the retail system. A rapid and complete store audit is being done by robot, virtual assistants. At present, the Google and Amazon are spending huge amount on making virtual assistants as smart as a human being. They are making money through advertising and its all about data they have about customers. They are gathering rich datasets to inform stocking decisions. Stockless retail provides store featuring no assistance from store personnel and self-checkouts within five minutes.

Research Model

The following are the figures displaying benefits of staff less proposition and storeless proposition and the final conceptual model depicting the transformation of retail industry through AI technology and the ultimate benefits reaped by the retailers and shoppers as a whole.

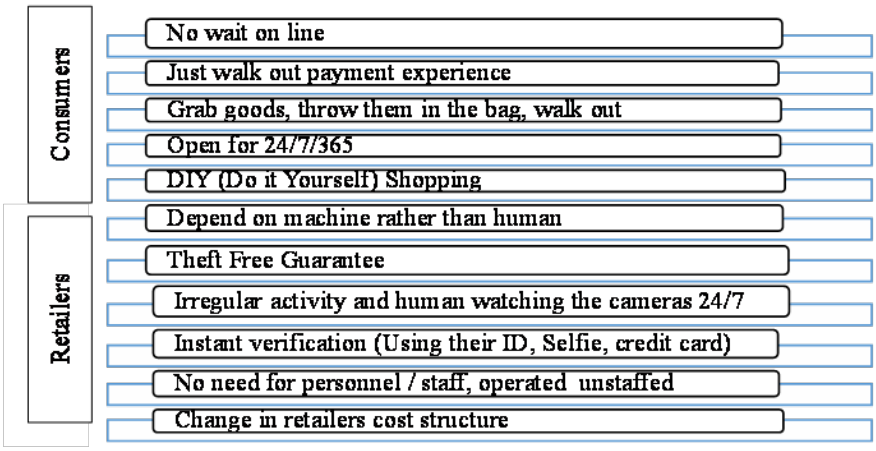

Figure: 1 Benefits of Staffless Proposition*

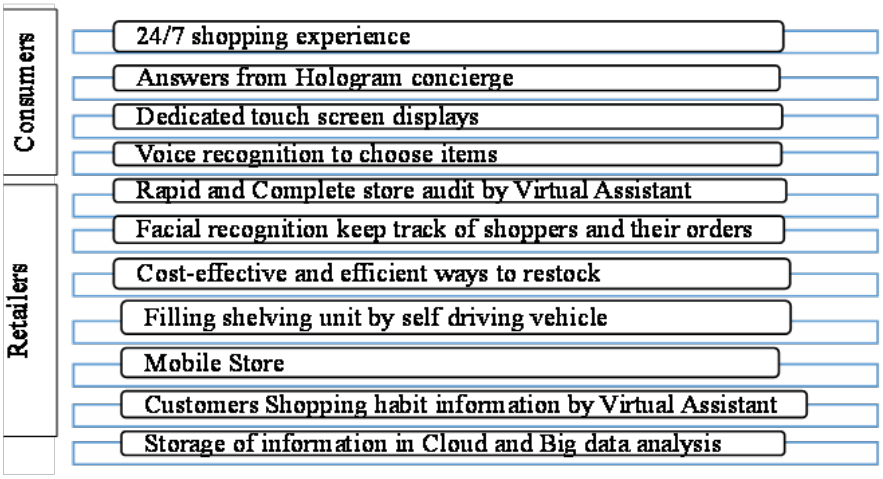

Figure: 2 Benefits of Stockless Proposition*

Model for Retail transformation through AI

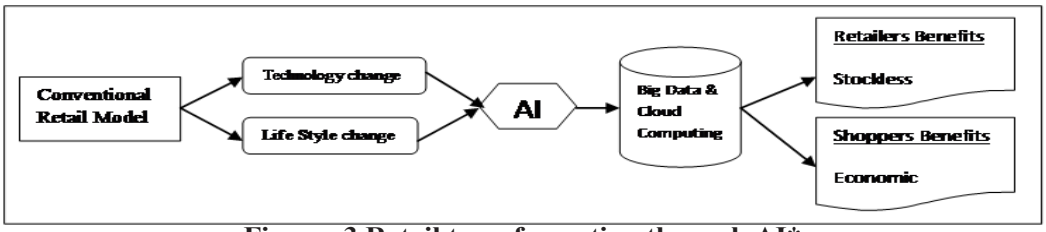

Figure: 3 Retail transformation through AI*

*Developed by Researchers

Conclusion

With some jobs potentially evolving into new roles where people will oversee, manage and augment AI and automation systems, employees may also be worried about being unfairly judged on their AI and automation skills and education rather than their career experience. Careful consideration must be given to the impact an AI deployment will have on a business to ensure that employees and customers come along for the ride. This study can be extended for further quantitative research by getting opinion from the shoppers and retailers. This study may be used to students, sellers, manufacturers, research companies and advertising agencies show special interest in analyzing recent developments in retail industry during this AI era.

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Transforming Banking Sector through Artificial Intelligence

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Abstract

Today, majority banks are eyeing towards Artificial Intelligence (AI) technology to help them use huge volume of data to increase customer engagement, to improve compliance and operational efficiency. Increased use of Artificial Intelligence in banking sector is showing a signs of interest and adoption as a result, all most all of the Indian banking sectors have started AI adoption. Its application in data analysis and customer service is creating an opportunity to become more personalized towards its customers through better insights and automation of backend work flows. The concept of AI is to stimulate the intelligence of human beings into machines with the help of sophisticated machine learning language and natural language processing algorithms, so that humans and AI will work together. AI will create growth through improved customer and employee experiences. In short, AI will enable to move away from repetitive tasks to more strategic and innovative kinds of work.

Keywords: Operational efficiency, Artificial Intelligence, Sophisticated machine, learning language, Processing algorithm, Data analysis.

Introduction

Artificial Intelligence has been around since 1956. Artificial Intelligence is the development of computer systems which enable to perform tasks that would require human intelligence. Recent developments in AI meant that AI powered applications became commercially viable. Artificial intelligence can be defined as "an ideal intelligent machine which is a flexible rational agent capable of perceiving its environment and takeremedial actions.AI is a group of related technologies which includes big data analytics, machine learning, deep learning, predictive analytics, and natural language. Artificial intelligence enablesthe banking companies to reformulate their work by creating innovative products and services, and transforming customer experiences.

Objectives

- To understand the concept of Artificial intelligence.
- To analyze importance and applicability of AI in banking sector.
- To evaluate the feasibility of using AI to transform the banking sector.

Literature Review

In recent years, Artificial Intelligence has impacted the Banking industry. It's a challenge for the banking industry, to keep up with competition, and standing themselves as an innovative company in the market. Artificial Intelligenceis a banking tool that helps the banking sectors to manage their business through effective planning and developing the services. Banks may use artificial intelligence for enhancing a business strategy to determine how it can be used for its efficient functioning and uninterrupted service provisions to its customer.

Methodology of the Study

Today artificial intelligence has become priority issue today for banking sector. Rapid advances in AI are coming at a time of widespread technological and digital disruption. It will bring completely new opportunities for the workforce – in the form of new jobs and new skill sets, hence it is necessary to know how the AI plays role in transforming the banking sector. The study is based on the conceptual framework and secondary source of data collection is being used to elaborate research objectives.

Definitions of Artificial Intelligence

John McCarthy defined it as "the science and engineering of making intelligent machines". It is a consummate "intelligent" machine that is a supple rational agent capable of perceiving its environment and takes measures that increase its probability of success. It is the blend of three advanced technologies – machine learning, natural language processing and cognitive computing.

Relevance and applicability of Artificial Intelligence in Bankingsector

- Today computers can handle most of the customer service queries due to matured speech processing and natural language processing technologies. This would mark an end to waiting in line results in customer satisfaction.
- Bank to customer personal connect will see drastic growth through AI, as automated financial services can be made possible to provide which generates expertise in making financial decisions. Even banks can analyze market behavior for setting the financial goals and personal portfolio.
- As humans and AI start to work together, banks will really feel the benefits of AI in cost reduction and revenue growth which may results in increased development of state-of-the-art products and enhancement in income per product, volume, customer retention and acquisition.
- With the help of AI and machine learning, financial marketers are being challenged to connect activity and behavioural inputs like transaction history, website inquiries, and social media interactions with consumer-centric outputs.
- Chat bots seems to be the primary AI used at Indian banks today through conversational app for focussing on customer service. This helps to address several queries, assimilate knowledge from various sources and improves accuracy rate.
- Today AI also helps banking sector to innovate its services, accordingly several apps have been introduced to answer FAQs and get in touch with the bank for loan & other products.
- AI assists to boost the most relevant products and services in email, thus streamlining the online process.
- Fraud detection has become one of the important fields to boost accurate and superior results with the intervention of artificial intelligence.

Feasibility of using AI to transform the banking sector

- Machine learning helps to direct consumers to the right messages and locations on the website as well as to generate outbound personalized content.
- Anti-money laundering (AML) has been designed to stop the practice of generating income through illegal actions.
- Plenty of Hedge funds across the globe are using high artificial intelligence models to extract or pool the funds from several sources of financial markets by allowing the investors to take a right investment decision.
- HDFC Bank has developed an AI-based chat bot, "Eva", to address the customer queries and accordingly bank interacted with over 530,000 unique users, and held 1.2 million conversations. Even bank is collecting the knowledge from thousands of sources to provide solutions in less than 0.4 seconds. Within the first few days of its launch, Eva has answered several queries from thousands of customers across the globe.
- ICICI Bank launched its AI-based chat bot, named iPal to interact with the millions of its customers and answered several queries with a 90% accuracy rate.
- Even Axis Bank launched an innovation lab called "Thought Factory" to accelerate the development of innovative AI technology solutions. They developed AI & NLP (Natural Language Processing) enabled app for Conversational Banking which helped its consumers for financial and non-financial matters related issues.
- Several applications of machine learning enable customer service, personal, financial/ wealth management, and fraud/risk management.
- Impact of machine learning's can be seen everywhere in the front, middle or back office in the form of lesser errors, prompt decisions, greater efficiency and customer experience.
- Today Deep Learning is getting used as a subset of machine learning to detect frauds PayPal is a very good example to fight against fraud.
- Deep learning is also useful in finding out new business opportunities. It also helps bank to understand the customer behaviour to identify opportunities from their likes and preferences.

Benefits of using AI in Banking

- **Saves cost:** As AI helps in providing the qualitative banking services hence it can directly interact with its customers which helps in saving the costs.
- **Talent mapping:** AI helps in understanding the ability of the customers; accordingly banks can develop its products and services.
- **Saves time:** AI tools helps bank customers to arrive at proper investment decisions as these tools performs repetitive task and ultimately saves the time.
- **Productive work:** As AI provides the qualitative services which helps to improve productivity with maximum efficiency.
- **Quality services:** AI is supporting banks through several languages, chat bots and apps to generate quality products and services.

Conclusions

- Several banks have attained 100% accuracy in account-closure validations.
- It is observed remarkable improvements in processing time.
- AI results in better customer interaction through chat bots.
- Machine learning algorithms helping in fraud detection.
- AI is helping banks to create goodwill in the market.

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Predictive Policing for Public Safety and Security Using AI

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Abstract

Life using AI becomes more prevalent in the next few decades. Keeping people safe could be the major challenge in coming days. As neural networks are increasingly utilized to capture and process data, we look at the benefits and dangers of future AI systems used in policing and security. Predictive Policing is an intelligence-led policing which focus on research based approaches to take another large step away from community policing. It provides the relevant information to describe, understand and foresee crime at different scales: operational, tactical and strategic events. The aim is to simplify decision-making. It makes sure that certain type of Law-enforcements should respond to the potentially lethal crime scenes. This enables police agencies to provide strategic deployment of resources to respond effectively to anticipated crimes. Predictive policing is a software which uses machine learning algorithm to calculate its predictions. The algorithm's trained for each new city's historical datasets, then it updates every-day with new events received from the department. AI isn't going to provide a quick fix for our Justice-system but it's going to simplify the problems.

Keywords: Artificial Intelligence, Predictive policing, Crime-analysis, Law-enforcement, Effective solution, Decision-making.

Introduction

Artificial Intelligence in all sectors of society is increasingly driven by data and analytics. Both government and private organizations are collecting, analysing and interpreting tremendous amounts of quantitative information to improve wisdom, decision making and to maximize efficiency. Crime analysts are now leveraging access to more data to generate predictions about where crime is likely to occur and where the suspects might be located. Law enforcement agencies are participating in the data and analytics revolution to improve public safety.

Objectives

It's developed for Law-enforcements to detect and prevent crimes.It simplifies the job of Law-enforcements by suggesting to take actions against certain crimes.It's implemented in court to take-out bias and for fairer sentencing decisions.

Techniques

There are three types of analysis techniques that police analysts can use to predict crime. They are:

i. Analysis of space.
ii. Analysis of time and space.
iii. Analysis of social networks.

[**Note:** The above techniques are not the only ways of predicting crime, as the there are a lot number of techniques increasing every day. However the above techniques provide an overview of different types of analysis commonly undertaken and their pro-cons.]

i. Analysis of Space

This technique use crime mapping to identify the crime hot spots, areas in which there is greater likelihood of crime than in the surrounding areas. Hot spot detection can inform short-term decision making about resource allocation and long-term policing related to crime reduction. It is important to keep in mind that a hot spot is a perceptual construct. The final location, size and shape of hot spot are influenced on factors such as:

- Which criminal incidents are included in the analysis?
- Whether the hot spots are determined by the concentration of past criminal incidents, environmental characteristics associated with crime, or both.
- The weighting scheme applied to past criminal incidents.

ii. Analysis of Time and Space

The factors mentioned above are used to find hot spots with high crime levels. However they cannot illustrate how the incidence of crime changes over time. The hot spots can help officers to make quick, informed decisions about how to allocate their time during a shift. Some tasks however demand attention to temporal patterns. If a police department has observed a series of robberies and is attempting to predict the next incident in the string, it is critical to identify both spatial and temporal path taken by the suspected offender.To generate or predict when and where the next crime in sequence will occur, an analyst can calculate the average time, distance and direction based on the appropriate interval length and by examining the temporal and spatial relationships between the incidents in a given sequence.

Although this technique has a strong theoretical basis, it does not always produce conclusive results. There are many sequences of incidents in which a clear spatial and temporal pattern fails to emerge. Sequence with small number of incidents or long timespans between incidents may fail to reveal an underlying pattern. An inaccurate data such as exclusion of incidents committed by the offender of interest or inclusion of event committed by another offender will bias the prediction. In conclusion, this technique is a potential tool for crime prevention, this technique requires refinement before it can be regularly used by law enforcements.

iii. Analysis of Social Networks

The chief purpose of the previous two categories of techniques discussed is mainly targeted on geographical locations and timely data. This technique is primarily focused on detecting person of interest, as opposed to location of interest. Through this technique, police can identify individuals that are central to criminal organizations such as gangs, drug distributions and crime networks, and develop effective interdiction strategies. Organized crimes such as drug trafficking, gang violence and serial robberies requires the creation and maintenance of various relationships. For example, a drug dealing network may include suppliers, distributers, smugglers, buyers and money launderers. Criminal networks are embedded in the social context in which they operate.

They victimize and are nourished by members of the community, including family, friends and retailers. This technique helps police analysts to map these numerous interpersonal connections and mine them for actionable information. The effectiveness of this technique is partially dependent upon the decisions made by the analyst, such as:

- Which initial members to include in the network?
- Which types of relationships to include?

If the mapped network is too small or too large, the prediction might not conclude proper results. Specific decisions should be guided by the nature and general known facts of the crime under investigation. Appropriate safeguards and procedures will need to be put in place to ensure the public that such analysis are not misused, to undermine the privacy of individuals who are not under suspicion or undercut the due process rights of individuals who are under surveillance.

Advantages

- Provide a circumstantial awareness leading to specific crime risks.
- Help understand factors and circumstances triggering or facilitating crime in general.
- Support a more effective planning and execution of crime prevention measures.
- Give information helping to initiate/adapt operational, tactical and strategic police activities.
- Contribute to specific case investigations.
- Provide tools for hypothesis building and assessment including the hypothesis evaluation against events or facts over time.
- Provide tools to reveal underlying patterns, meaning and trends within and across datasets via analytics.
- Provide tools for assessing which data is or is not necessary from an analyst perspective.

Downsides

- Overreliance on technology.
- Privacy and security matters.
- Slight fault in data may lead to wrong predictions.

Challenges

1. Improving surveillance in public places.
2. Collecting and managing large volumes of accurate data.
3. Ensuring analysts possess sufficient domain knowledge.
4. Maintaining adequate analytical resources.
5. Fostering productive communication between analysts and officers.
6. Ensuring officer follow-up on recommendations.

Recommendations

- Treat predictive policing as an extension tool or an addition, but not as a substitute for traditional policing methods.
- Keep analysts updated with new implementation techniques and to be available only for law enforcements.
- Consider the nature of jurisdiction and crime.
- Collect accurate and timely updated data.
- Designate experienced and knowledgeable leaders to make final decisions.

Conclusion

Intelligence led policing, a predictive approach of analysing the problems with a proper decision making leads to minimize the crime rates. The historic study of particular location, previous crime type, rates and the frequency of crime patterns are easily assisting policemen to reduce social harms and ethical issues. The policemen have to integrate their knowledge and criminal intelligence for crime analysis to prioritize and classification to come up with a best suitable decision. The same strategy and working principles can be applied for any type of crime irrespective of type, location which may in turn lead to control and get hold of things and people finally making a safe and a better World.

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Envisaging Artificial Intelligence in Indian Digital Army

Surabhi Srinivas

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Abstract

The very purpose of AI is to preserve and recreate itself without the limitations of the human body. It is an oxymoron. It is guided by imagination. AI demands precision. Digital India, Flagship programme launched byPrime Minister NarendraModitriggered policymakers to establish AI ready infrastructure by making the country digitally empowered in the field of technology. With rivals being ahead of us, it is of the utmost importance to view AI as acritical element of national security strategy. Elon Musk called the prospect of artificial intelligence "our greatest existential threat" in a 2014 interview with MIT students1. Unmanned drones furnish sustained surveillance and meteoric strike on targets, and small robots are used to disarm improvised explosive devices.Stone pelting could be a history soon. The defence budget for the year 2018-19 is increased by 7.81 per cent2 to meet the operational requirements and research developments to diminish the need for human soldiers to risk their lives.While the industries gen up on AI-research, numerous cyber security start-ups are inculcating AI to tackle the threats. This paper seeks to study the challengesfaced by the defence and the public at large to address and adapt to the developments in the field of AI. The study is based on various books, articles and case studies with interpretation. The paper is concluded by highlighting the importance of Rational thinking to make the world a better place.

1.Observer - Stephen Hawking, Elon Musk, and Bill Gates Warn About Artificial Intelligence by Michael Sainato 08/19/15

2. The Economic Times by ShauryaGurung, ET Bureau, Feb 01,2018

Keywords: Artificial Intelligence (AI), Defence, Cyber Security,Digital India, Infrastructure, Robots, technology.

Introduction

Artificial Intelligence (AI)is the computer system designed to perform the tasks of human beings. Klaus Schwabfounder and Executive Chairman of World Economic Forum, Geneva says "we stand in the brink of technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before".

The history of Artificial Intelligence (AI) began in the period of classical, lore and tittle-tattle. As Pamela McCorduck writes, AI began with "an ancient wish to forge the gods." In the late 1940s and 50s, mathematicians, psychologists, engineers, economists, doctors

began to consider and debate the possibility of creating an artificial brain which was later evolved as an academic discipline. The invention of the Colossus Computer in the 1940s was the result of an attempt to describe the mechanism of human thinking as mechanical manipulation of symbols, a machine based on the abstract essence of mathematical reasoning. This device dramaticallytriggered scientists to discover the possibility of constructing an electronic brain.

Only in the 21st century when many problems were solved by successfully applying machine learning due to the presence of powerful and effective computer hardware, investment and interest boomed in the field of AI. Observers such as Ray Kurzweil anticipated the forthcoming of artificial general intelligence: a machine with intellectual capabilities that exceed the abilities of human beings.

AI has been used to tackle some of the world's greatest challenges and to develop and advance in numerous fields like optical character recognition, handwriting recognition, speech &face recognition, artificial creativity, computer vision, virtual reality, image processing, photo and video manipulation, diagnosis (artificial intelligence), game artificial intelligence and computer game bot, natural language, processing, translation , semantic web, E-mail spam filtering, robotics, , cognitive, cybernetics, developmental robotics (Epigenetic), hybrid intelligent system, intelligent agent, intelligent control, litigation. AI has become a major area of investment. It is estimated that annually worldwide military is spending approximately 7.5 billion USD(in 2015) especially on drones which are capable of autonomous functioning and are classified as assets. In 2017, Vladimir Putin stated that "Whoever becomes the leader in (artificial intelligence) will become the ruler of the world". Many artificial intelligence researchers seek to distance themselves from military applications of AI as it can be dangerous.

Lee De Forest, inventor of radio device explored the concept and idea of combat drones which was presented through an article and was published in a 1940 publication of popular mechanics. Butthe modern military drone is the art of John Stuart Foster Jr., a nuclear physicist and former head of the Lawrence Livermore National Laboratory who was an aeroplane hobbyist and had a visionary to build weapons. Major invention took place in 1973 when Defence advanced Research project agency (DARPA)built two prototypes called "Prairie" and "Calere" with a modified lawn-mower engine staying aloft for two hours while carrying 28-pound of the load.

Israel launched unmanned aerial vehicles (UAVs) for real-time surveillance, electronic warfare, and decoys. Visual intelligence provided by UAVs helped Israel to completely counterpoise the Syrian air defences in Operation Mole Cricket 19 at the start of the 1982 Lebanon War, resulting in no pilots downed.

Astonished by the Israel's technological advancement, The US acquired many UAVs. As the UAVs improved, it was deployed in the war for the very first time during the First Gulf war and according to a May 1991 Department of the Navy report: "At least one UAV was airborne at all times during Desert Storm." After the Gulf War successfully demonstrated their utility, global militaries invested widely in the domestic development of combat UAVs. On October 7, 2001, in Kandahar American UAV murdered a human. in the name of global war on terrorism, USA has conveniently increased its used of drone to attack foreigncountries. It is estimated that 6000 and odd people were the victims of the drone attacks in the USA in 5 years.

Death of thousands by the unmanned UAVs caused chaos, moral and legal concerns. Autonomousinitiation of attack without human involvement is even more abstract than the use of weapons such as missiles, Arial bombardment for the reason that there could be a possibility of quick contrast action lacking human sensibility. On the other hand, they reduce casualties of the soldiers. Drones built by the human can be hacked, manipulated, destroyed and misused or there can be an error in the programme, malfunction resulting in disaster and deaths. There are

on-goingdebates as to whether the attribution of moral responsibility can be apportioned appropriately under existing international humanitarian law, which is based on four principles: military necessity, the distinction between military and civilian objects, prohibition of unnecessary suffering, and proportionality. To overcome the hurdles of hacking, manipulating and to deal with other cyber-crimes and crimes related to AI it is very necessary to have a concrete set of laws. Privacy and confidentiality being major concerns in today's world, many start-up are using AI to tackle issues and to protect the system from aliens.

In India, public flying of drones was prohibited. Government of India Office of The Director General of Civil Aviation on Oct 30th unveiled draft norms for the usage of Ariel vehicles to develop a regulatory framework to safeguard the interest of the people without compromising on the security. Until now, flying drones in India without the permission of concerned authorities was illegal owing to safety concerns.

It is to be noted that it not only takes away life but it affects the mental health of the people alive. UAV operators, controllers experience psychological stress due to combats resulting in posttraumatic stress disorder especially when a death occurs. These psychological conditions can be experienced by civilians who witness and face such wars. In war zones, people avoid gathering at one place and often children are not sent out of house fearing death.

AI is an oxymoron AI is capable of taking life and giving life. AI is prominently used in the medical field to save lives. It gives way for space exploration, reduction of errors, in the field of medical sciences for the purpose of conducting robotic radio surgery; increases work efficiency, faster technological advancement, Delivery of blood, food to the disaster victims, delivery of goods by e-commerce companies, taking the survey, Ariel mapping, damage assessments during natural calamities and makes life easier and convenient. Data, experience, logic, facts and opinion should go through a process of rational thinking for a sound output. It is a trial and error method because of problems with physical concepts of the mind leaves no or little room for free will. Ability to consider the relevant variables of a situation and to approach, collocate, and examine relevant information to arrive at a sound conclusion is the need of the hour.

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Artificial Intelligence-In Defence

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Abstract

Al can be understood as the theoretical creation and development of computer systems or algorithms able to perform tasks normally requiring human intelligence. There is a continuous, controversial debate going on in the Media: on the one hand, about the potential of artificial Intelligence as game changer that will bring huge Benefits to humankind; and, on the other, on the supposed threat it poses to our civilization given that the impact of Al in the future is difficult to evaluate at this time. There are already calls for ethical regulation before we lose control on this technology. Commercial companies making huge profits on the global market are driving innovation in this field and developing new algorithms to provide intelligence through different applications exceeding recognition of images, voice and text.

Introduction

In the last century, the arrival of digital computers made it possible to perform mathematical operations and data storage at a rate far beyond the capabilities of human beings. It then became possible to develop very complex algorithms and eventually programme machines in a way that allows them to learn and provide solutions comparable to what we call intelligence in human beings. This gave computer based systems the possibility to learn from data, the environment and from their own errors: something known as 'cognitive computing'.

Deep Learning, a technology based on specific kinds of Neural Networks, is responsible for the quantum leap observed in the field since 2009. It uses data analysis to predict trends and discover hidden information and patterns in the ocean of data provided by existing networks and sensors.

Having identified a number of different 'layers' (and generations) of AI, we will now propose to also differentiate between a number of different 'layers' (and maybe again also evolutionary mutations) of defense and armed force. When most of us think about the concept of 'armed force' today, we conjure up highly hierarchically organized mobile formations of uniformed soldiers equipped with a wide range of industrial-age physical technologies based (mostly) on steel, engines and firepower (tanks, frigates, jet-fighters, etc.), that are employed by national political leaders to control and secure their territory and to defend and/or advance their national goals through the application of (often lethal) industrialkinetic197 violence.

Layers of 'Defense'

- 'Defense' as military operators ('war fighters' in the parlance of some nations) – e.g. the Netherlands Defense Force (NDF);
- Defense as an organization that supports these operators but also interacts with its counterparts – e.g. the Netherlands Defense Organization (NDO);
- Defense as a player in an increasingly more whole-of-government security oriented approach – e.g. the Netherlands Defense and Security Organizations (NDSO);
- Defense as the (potential) catalyst of a broader defense and security ecosystem of sensors and effectors – e.g. the Netherlands Defense and Security Ecosystem (NDSE)

Indian Army leverages the assistance of CAIR in integrating Al

Ai-powered robots can travel across hazardous terrains, perform remote surgery, and most importantly execute surveillance missions. As they continue to grow more sophisticated, autonomous, and fast, private players and federal agencies are gradually integrating robots within the defense landscape.

Global developments in the Robotics Industry fueled towards enhancing Defence

Most of the advanced defense technologies in the world are robots, and with time the defense industry is gradually shifting towards integrating Ai into the robots they build for military applications. For instance, the military has deployed unmanned autonomous vehicles for reconnaissance (such as detecting anti ship mines in littoral waters), monitoring coastal waters for adversaries (like pirate ships), an precision air strikes on evasive targets.

US based Defense Advanced Research Project Agency, or DARPA, as it is popularly called, operates under the Department of Defense is a pioneer in deploying emerging technologies in defense. The organization was established in 1958 as reaction to the launch of Sputnik, and has

since then pursued areas of interest, considered more extreme than the individual. DARPA officials had earlier released a project called, Explainable Artificial Intelligence (XAI), focused on machine learning and human/computer interaction. End-users can understand, trust, and manage the emerging generation of artificial intelligence (AI) systems using XAI.

Moreover, American robot-maker Boston Dynamics could use DARPA's funding and oversights in building a bipedal humanoid robot, named Atlas. The robot stands 1.8 meter tall, and can execute a variety of search and rescue operations, furnish emergency services, and perform multiple other tasks, in environments where humans can't possibly survive.

For the time-being, Al is mostly used by the military in non-combatant roles. Artificial Intelligence was leveraged by the States as a part of their two primary operations Desert Storm and Desert Shield, during the events of Gulf War. The U.S. made use of an Al-powered planning tool, called DART. Moreover, projects are being undertaken which involve Development of training simulators incorporating AI.

AI in Other Armed Forces Today

The armed forces of the world's leading military powers all recognize the qualitative edge AI systems are likely to give them today and tomorrow – soldiers who often "face problems of scale, complexity, pace and resilience that outpace unaided human decision making."224 Whether for commanders faced with unconventional adversaries in high speed engagements; intelligence analysts faced with drawing the correct conclusions from peta bytes of noisy data; or frontline soldiers; AI promises to augment analysis and decision-making capabilities and reaction times both, speed up learning, and improve their ability to act with discretion, accuracy, and care under uncertain and changing conditions. It is therefore little surprise that many of world's leading militaries are running active AI development and deployment programs; however, it is the way these AI systems are tailored to underlying needs, which reveals a lot about the evolving strategic and tactical doctrines of these powers – and the changing nature of deterrence and warfare in the decades to come.

China

As the second biggest 'player' in general-purpose AI China is increasingly showing that it is more than capable of keeping pace with the US in this field. While in terms of fundamental breakthroughs, China is still lagging behind the US, there has been a massive increase in growth in terms of cited (machine learning) research.225 To spur this, in February 2017, China's National Development and Reform Commission approved a plan to establish an online 'national laboratory for deep learning', commissioning Baidu to set up the research effort which will focus on seven

areas of research including machine learning-based visual recognition, voice recognition, new types of human machine interaction and deep learning intellectual property. The overarching goal, it stated, is to "boost China's overall competence in artificial intelligence". Meanwhile, major Chinese companies such as Baidu, Alibaba and Tencent have proven remarkably adept at rapidly iterating over breakthroughs to develop – and deploy – applications of this technology, as well as making remarkable home-grown breakthroughs in fields such as speech recognition or self-driving cars.

Israel

Israel was one of the first countries to reveal that it has deployed fully automated robots: self-driving military vehicles to patrol the border with the Palestinian-governed Gaza Strip. Next in the IDF's plans is to equip the vehicles with weapons, and deploy them in stages to Israel's frontiers with Egypt, Jordan, Syria, and Lebanon. Meanwhile, the Israeli 'Harpy' anti-radiation unmanned aerial vehicle is claimed to already able to detect, target, and engage enemy radar installations without any human oversight or supervision. Further in the future, the military is looking to form mixed combat units of robotic vehicles and human soldiers.

Multi-Application System (UMAS), is "a software-based package that is designed to provide 'advanced' control of a 'variety' of manned and unmanned applications. As such, it is described as incorporating proprietary artificial intelligence and 'unique' interfaces and as offering 'unrivalled' levels of system reliability and performance.

Russia While still somewhat lagging behind on its great power rivals in terms of deep machine learning capabilities, the Russian Federation has displayed a steady commitment to developing and deploying a wide range of robotic military platforms, including unmanned ground vehicles (UGVs), with the full backing of its MoD and domestic industries: in January 2017, President Putin called for the creation of "autonomous robotic complexes" for use by the military, previously entrusting the Advanced Research Foundation with the new 'National Center for the Development of Robotic Technologies and Basic Robotic Components', in order to consolidate so far uncoordinated efforts for the creation of advanced robotic equipment.

US

As of yet the most prominent actor in the field of military AI, the United States has been actively involved in AI-related R&D since its very emergence of the field.. However, having overseen and driven much of the early breakthroughs in AI research (and computer science broadly) during the Cold War, the bulk of the US's efforts have now shifted towards deploying these technologies with a clear focus on increasing its armed forces' operational effectiveness as well as standoff force projection capabilities (A2A in our terminology). In this speech to the Defense One National Security Forum conference, Work identified five pillars to the military future:

1. Autonomous deep learning machine systems which are able to see the patterns through the chaff of hybrid warfare, to give early warning that something is happening in gray zone conflict areas (such as the Ukraine), and which are able to respond at extreme speed, and under rapidly shrinking engagement windows. Such learning systems might, he argues, fill the gap in those fields – such as air defense or cyber defense – where human operators alone cannot achieve sufficient speed to stop or degrade a determined attack.

2. Human machine collaboration, which will include the promotion of so-called 'Centaur' warfighting,274 going from the observation that teams combining the strategic analysis of a human with the tactical acuity of a computer, reliably defeat either human-only or computer-only teams across many games.

3. Assisted human operations, whereat wearable electronics, uploadable combat apps; heads up displays, exoskeletons, and other systems, can enable humans on the front line to perform better in combat.

4. Advanced human-machine combat teaming where a human working with unmanned systems is able to take better decisions and undertake cooperative operations. Examples of these are the Army's Apache and Gray Eagle UAV systems, which are designed to operate in conjunction. Other examples are drone 'motherships'; electronic warfare networks, or swarming systems which will help transform operations by enabling one mission commander to direct a full swarm of micro-UAVs.

5. Network-enabled semi-autonomous weapons, where systems are both linked, and hardened to survive cyber attack.

All of these systems would be networked together through learning systems, enabling a form of 'algorithmic warfare' and a machine-learning approach to targeting.

The Emergence of Private Players in the Landscape

Private players are entering the space, as the U.S. Air Force leverages the assistance of private industry in developing systems which facilitate faster collection and examination of information. ALPHA was initially developed by Psibernetix as training aid for the U.S. Air Force. The Al program has been re-commissioned into friendly co-pilot system to help human pilots using the simulator. The use of Al will help improve reaction and decision making time to implement more effective military actions.

Military-industry partnership, maintained and encouraged through legislative, policy, and organizational innovations will be instrumental to in ensuring the appropriate use of Al for national defense. The federal government must invest towards Al and robotics, depending on the combatant needs. This will help towards developing a world class military
technology

Indian Army's Venture into the Al landscape

India has no plans to lag in the race of equipping nations' armed forces with up to-date artificial intelligence (AI) and robots. CAIR is a DRDO lab, leading research in artificial intelligence for India. been working on a project to develop. Multi Agent Robotics Framework (MARF) for more than eight months now. MARF will equip India's armed forces with an array of robots that can function as a team, in fashion similar to what our soldiers do. The Al-powered multi layered architecture is capable of providing multitude of military applications, and will enable collaboration amongst a team of various robots Indian Army has already built Wheeled Robot with Passive Suspension, Snake Robot, Legged Robot, Wall-Climbing Robot, and Robot Sentry, among others.

CAIR has also begun working on a project entailing the development of dependable intelligent mobile robots. This will assist in equipping Indian armed forces with self- reliant, adaptable, and fault-tolerant systems; besides improving robot's' ability to execute tasks autonomously. These robots have been designed to undertake operations in various conditions, both environmental and terrain.

Unmanned systems targeted for military operations could only be enabled by intelligence and mobility. Moreover, India has several types of terrain mountainous, desert, rural, urban, outdoor, and indoor; each presenting its own locomotion challenge to any robotic platform. This impediment could only be tackled by undertaking extensive research in locomotion technologies.

Robotics in Defence

The development in defence technology and the geo-political environments necessitates increased defence spending year by year due to the requirement for weapons and arms. However, the recent trend to replace the convention equipment by robots smart and intelligent machines that learns by observation, trial and error to enhance operational efficiency, are providing costeffective alternative.

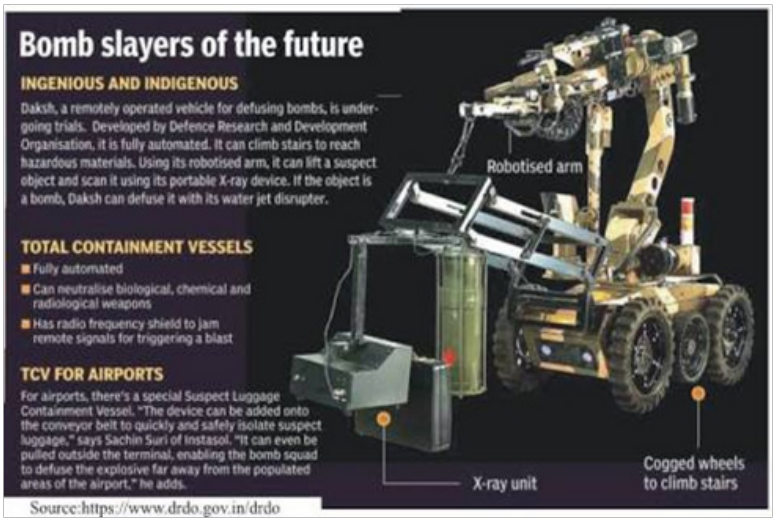
Al can provide multiple options for military applications for a strategic, operational and tactical level planning in many of the functions. The beginning has been made with Unmanned Aerial Vehicles (UAV), Unmanned Ground Systems (UGS) guided bomb and missile systems, increasing ranges and accuracy of the smart ammunition etc. are increasingly preferred. Indian defence services are presently using indigenously designed Remotely Operated Vehicle (ROV) Daksh for Bomb Disposal, Unmanned Autonomous Vehicles (Netra UAV, Rustom, Searcher etc.) for reconnaissance, other mini robot machines.

Indian Army has placed the order for 200 Remotely Operated Vehicle (ROV) Daksh robots to defuse explosives. Additionally, DAC has approved approx. 544 Robots for Indian Army from indigenous source.

The robots will be Private sector Robotics and Artificial intelligence in defence can be a new potential sector for the private players. Till now private sector have been focused primarily in making Robots for consumer goods market. Making products for the defence can also have a dual use. There are organization into making Robots of various kind, some of these are TAL manufacturing solution limited, PARI Robotics, Hi-Tech Robotics, KUKA Robotics, Robo soft Systems, Serial Innovations, Fanuc Corporation, Idea Forge amongst others.

Additionally, there are some foreign companies who are in development of thistechnology. Some specific examples being:

Uran-9, atracked armored vehicle controlled remotely by an operator equipped with 2472 30-millimeter cannon with a rate of fire of 350 to 400 rounds per minute and can shoot high explosive incendiary and armor-piercing ammunition.



Emerging Trend in Al

The next level would be the Robotics with Artificial Intelligence. The future war systems could be dominated by unmanned systems. Artificial Intelligence and Robotics shall have the following applications:

- Image interpretation for target identification and classification.
- Expert systems for diagnosis and maintenance of sophisticated weapon systems such as radars and missiles.
- Robotic equipment can be used to provide precision targeting support and carriage of ammunition and accuracy.
- Camera equipped and shock-resistant platforms to provide fire power remotely are also possible applications.
- Systems for diagnosis and maintenance sophisticated weapon systems
- Missile target range and trajectory analysis for evaluation of kill zones, launch time and simulation to assist in qualifying missil performance in various environments.
- Enhanced use of robots for anti improvised explosive device, extraction of personnel, firing of guns and other applications.

Conclusion

Artificial Intelligence is highly likely to radically transform our thinking about and our practical approaches towards armed force and defense.

Most of the literature we found on AI and defense is currently concentrated in the top left cell of this table: conveniently 'narrow' AI that can help our current operators and warfighters to stay within the current paradigm but to better accomplish their current tasks. We have seen that some of the key military players today – none more than the Artificial Narrow Intelligence Artificial General Intelligence Artificial Super Intelligence'Armed Force' (A2A) Monitor frontrunners and buy opportunistically Review robustness current force structure Ministry of Defense (A2D

and D2D) Identify short-term challenges and opportunities Identify long-term challenges and opportunities Comprehensive (D2G and G2G) Identify short-term challenges and opportunities Identify long-term challenges and opportunitiesCatalyze dialogue with all stakeholders Defense and Security Ecosystem (E2E and E2I)Explore new niches Explore new niches Existential challenges and opportunities: fundamental rethink of defense101HCSS R epoRt United States, but other (aspirational) peer-competitors as well – are focusing primarily on this cell in the table. Based on the recent track record of cost inflation in the A2A option space, the financial implications of focusing on this particular type of defense AI is highly likely to prove exorbitant. Given the Pentagon's superior financial firepower (which has also just received a significant boosted from the incoming Trump administration), its currently still dominant position in the field of AI, and the peculiar dynamics of its political economy of defense – the investments it is likely to make in this area are – in our assessment – likely to be both substantial and impactful. This means they will yield uniquely new and powerful – even if 'just' in the industrial-age sense – capability options that will be expensive but may prove to still provide far better value-for-money than anything European force providers (certainly small- to mediumsized ones) would likely be able to generate in this space in their own right. We therefore recommend a cautiously pragmatic and opportunistic attitude towards this cell of the AI option-space. Investment opportunities will undoubtedly emerge in this segment that small- to medium-sized defense providers might be able to jump on – even with respect to their own R&D funds, but our suggestion here would be to be as opportunistic as our defense industrial basis has been in recent 'big ticket' defense procurement projects.

As the overall table and especially the right-downwards orange arrow in Figure 15 suggest, however, we anticipate far superior value-for-money opportunities for SMC DSOs in the other cells of this table – certainly downwards towards the defense and security ecosystem, but arguably even towards the right bottom as we move towards artificial superintelligence.This, then, would require a more sustained and comprehensive debate between the various public and private stakeholders within the broader defense and security ecosystem about what the optimal way would be to to ensure defense and security value for money in this day and age. The suggestion we make in this paper, is that we see few other actors within those ecosystems that have similar perspectives and aptitudes than our defense organizations. Our suggestion is not that they should be the ones to execute the various broader defense and security efforts that might emerge from these broader discussions. We do suggest, however, that they might be better positioned than many others to kickstart and catalyze this discussion.The final – existentially important – cell in this option space is the one to right of the option space. Artificial super-intelligence – i.e. intelligence that is superior to that of homo sapiens – is likely to pose quite unique challenges to defense and security planners. We have seen in our longue durée321 historical overview of the nexus between intelligence and defense how the non-physical, purely cognitive part of 'human force' proved evolutionarily superior to the sometimes physically stronger but cognitively and socially weaker 'force' of other species. If that history is a lesson, then the emergence of super-human intelligence is surely a transition that requires extraordinarily careful human consideration.

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Macro-Economic Impact of Artificial Intelligence on Indian Economy

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Abstract

This article evaluated the macro-economic impact of Artificial Intelligence (AI) on India's Gross Domestic Product by considering Gross Fixed Capital Formation (GFCF) by Public and Private sector as the proxy indicator for AI. The analysis reveals that the contribution made by GFCF of private sector in GDP (20 per cent) is relatively higher than the share of GFCF of public sector in GDP (10 per cent) during the period 1950-51 to 2015-16. The correlation matrix indicated high degree of association between the GFCF by Public and Private sector and increasing growth rates of GDP in India. The regression analysis predicted that India's GDP is going to increase by 12.1 per cent by 2020 due to the increased investment on aggregate GFCF in India. Furthermore, the recent proposed policy in the India's budget of 2018-2019 related to Government's intervention in the emerging areas of AI will go a long way in ensuring better prospects and better future by boosting job growth, productivity and GDPfor Indian economy.

Keywords: Artificial Intelligence, Gross Domestic Product, Gross Fixed Capital Formation, Labour-intensive and Capital-intensive technologies

Introduction

Indian economy is one of the fastest developing countries of the world. The Census statistics reveal that 72 per cent of the people are dependent on agriculture and allied activities and it was followed by 10.6 per cent across industries and 17.3 per cent across the service sector during 1951. Over the period of time, there is gradual transformation across these sectors. Later in 2011, it is observed that the share of labour across agriculture sector have declined by 20.9 points and have increased across industries and services by 11.6 points and 9 points respectively. Further the agriculture sector contributes only 15 per cent to Gross Domestic Product (GDP) even though it grabs highest labour share relatively across the sectors. On the other hand, the service sector holds only 26.7 per cent of labour share but contributes the highest share in GDP i.e., 59 per cent. Similarly, the industrial sector contributes 26 per cent in GDP by holding 22.1 per cent of the labour share.

It therefore clearly indicates that there is gradual shift from labour intensive technologies to capital intensive technologies. It helps in increasing the level of investment in the various sectors by increasing

the quantity of the income-generating capital assets, thereby increasing productivity of the sectors. Furthermore, capital-intensive sectors are contributing more towards the growth of GDP and are often referred as "Engine of Growth". The major reason that can be attributed to such gradual shift is the invention of Artificial Intelligence (AI) and Digitalisation. In earlier days, the concept of Artificial Intelligence was more or less restricted only across Computer Science and mechanical engineering sectors. But gradually it is now transcending across each and every socio-economic sectorand is transforming them into more capital-intensive sectors. Therefore, there is need to understand the impact of AI.

Literature Review

Nilsson (1984) analysed the influence of AI on employment and distribution of income. It has deeply dealt with the work eliminating consequences of AI which reduces the labour toil in the economy.Aghion et.al., (2017) examined the potential impact and implications of Artificial Intelligenceon economic growth. It attempted to analyse the linkages between AI and economic growth by integrating production, marketing of goods, technology for new ideas and automation in capital share dynamics. Lee et.al., (2017)evaluated the potential economic benefits of AI on Ireland economy in 2030 and concluded that AI helped Ireland in boosting productivity, product enhancements, consumption-side enhancements and economic opportunities. Some of recent studies conducted namely Gilham et.al., (2018) and Basu et.al., (2018)have analysed the present and future impact of AI across socio-economic sectors namely agriculture, industry, education, health, financial services, security and defence, public utility, consumer and retail services in Indian economy.

Objectives of the Study

On the similar lines of the articles and reports reviewed in the previous sections, this article tries to evaluate the macro-economic impacts of AI with regard to Indian economy and it also tries to project the future economic growth in terms of GDP by considering Artificial Intelligence as the major driving factor contributing towards increase in economic growth of Indian economy.

Brief History of AI

The emergence of Artificial Intelligence (AI) can be witnessed with the advent of digital computers in 1950s. The actual initiation of AI can be traced back to 1956 by John Mc Carthy who is considered to be the Father of AI. Later on, the development of AI was carried by prominent persons namely John von Neumann, Alan Turing, Emil Post, Stephen Kleen and others. The concept of AI refers to branch of science involving the use and application of machines to carry out the activities of human. The major components of AI include Assisted Intelligence and Augmented intelligencewith human intervention on one hand and on the other hand include Automated Intelligence and Autonomous Intelligence without human intervention. It works in line with the aspects namely machine learning, deep learning, logical reasoning, voice recognition, robotics, algorithms, navigation, remote sensing, decision making, collaborative and adaptive systems.

Results and Discussion

Artificial Intelligence (AI) has become one of the significant component in enhancing the quality of capital intensive technologies. It has become an integral part of the planning process in such a way that in order to fulfil the socio-economic objectives of five-year plans, the AI technologies have been integrated along the socio-economic sectors.The recent AI technologies

in Indian market include Smart drones for digital farming, autonomous tractors, fleet of agribots for fertilisation and harvesting, image recognition softwares for crop-monitoring and prediction of farm yields, Machine learning, CCTV cameras, bio-metrics, diagnostics services, robotics in industries and service sector etc. With its various technical innovations involving digitization, it is going to transform and dominate the rapidly growing market in India leading to growth in output and employment. There is debate by the researchers that AI will replace human labour leading to unemployment, but one of the recent report of FICCI and NASSCOM titled "Future of Jobs in India"in December 2017 has predicted that "AI will create 2.3 million new jobs while eliminating only 1.8 million jobs till 2020. Further in 2021, AI augmentation will generate 2.9 trillion dollars in business value and will recover 6.2 billion hours of worker productivity." Therefore, AI is going to have better emerging prospectsand better future by increasing GDP and per-capita income.

GDP is an important indicator to assess the macro-economic growth of any country. The increase in GDP depends upon various factors namely employment, Gross value added, investment, consumption, savings, technology etc. Analysis rests on the basic classical assumption of Ceteris Paribus principle which states "Other things being equal". In this regard, it is assumed that out of the various factors determining GDP growth, Artificial Intelligence is the only major driving factor contributing towards growth of GDP in Indian economy".Since expenditure on AI in India is not available, Gross Fixed Capital Formation (GFCF) is used as a proxy indicator to analyse the impact of AI on the growth of GDP in India (See Table 1). It refers to the measure of value for existing and new capital stock leading to income generation. It is also termed as Net Investment as it does not include the depreciation charges of capital assets and purchase of land.

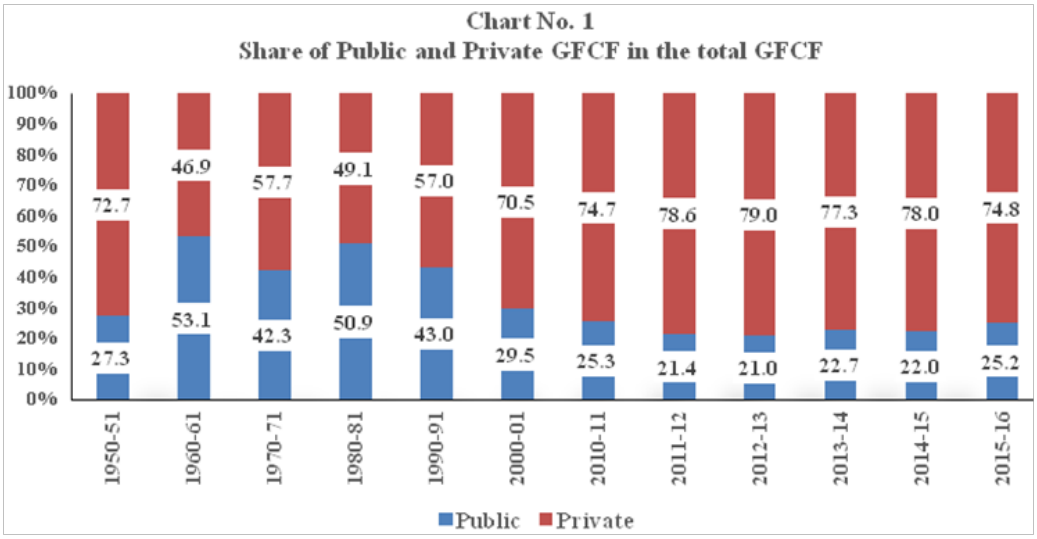
During the period 1950 to 2010, the aggregate expenditure on GFCF in India has seen tremendous increase from Rs. 968 crores in 1950-51 to that of Rs.2407069 crores in 2010-11 with Compound Annual Growth rate of 13.92 per cent. During the period 2000 to 2010, the aggregate expenditure has risen by 18.10 per cent. Since 2010, there is greater surge in the expenditure on GFCF by both public and private sector in India owing to the growth of AI in India. Further in the year 2015-16, the GFCF expenditure stood at Rs. 4002781 crores. Chart 1 presents the composition of GFCF by public and private sector in the total. During the year 1950-51, the share of private GFCF in the total was high as compared to that of the share of public GFCF in the total. Before the initiation of economic reforms in India, the ratio of public and private GFCF was 43:57. After the economic reforms of 1991 in India, the share of private GFCF in the total has seen drastic increase. Further in 2015-16, the ratio of public and private GFCF stood at 24:76.

Table 1 Gross Fixed Capital Formation in India

Year	Amount of GFCF (Rs. in crore)			Share of GFCF in GDP (in per cent)		
	Public	Private	Total	Public	Private	Total
1950-51	264	704	968	2.5	6.8	9.3
1960-61	1215	1075	2290	6.8	6.0	12.8
1970-71	2742	3746	6488	5.8	7.9	13.6
1980-81	13656	13159	26815	9.1	8.8	17.9
1990-91	60013	79650	139663	10.2	13.6	23.8
2000-01	145973	349223	495196	6.7	16.0	22.7
2010-11	609189	1797881	2407069	7.8	23.1	30.9
2011-12	641260	2356472	2997733	7.3	27.0	34.3

2012-13	698031	2626943	3324973	7.0	26.4	33.4
2013-14	796950	2718671	3515621	7.1	24.2	31.3
2014-15	833225	2950612	3783837	6.7	23.7	30.4
2015-16	1008535	2994247	4002781	7.4	21.9	29.3

Source: Derived from Economic Survey of India 2017-2018



During 1950-51, the share of aggregate GFCF in GDP stood at 9.3 per cent. It has seen gradual increase over the years. Since 1990-91, it has contributed more than 20 per cent in GDP. Further in 2015-16, it has stood at 29.3 per cent. Sector-wise contribution reveals that on an average the share of private sector's GFCF is quite high when compared to the share of public sector's GFCF. Since 2010, the share of private sector's GFCF in GDP has crossed 20 per cent in India whereas the share of public sector's GFCF in GDP has not crossed 10 per cent of GDP (See Table 1 and Chart No.2).

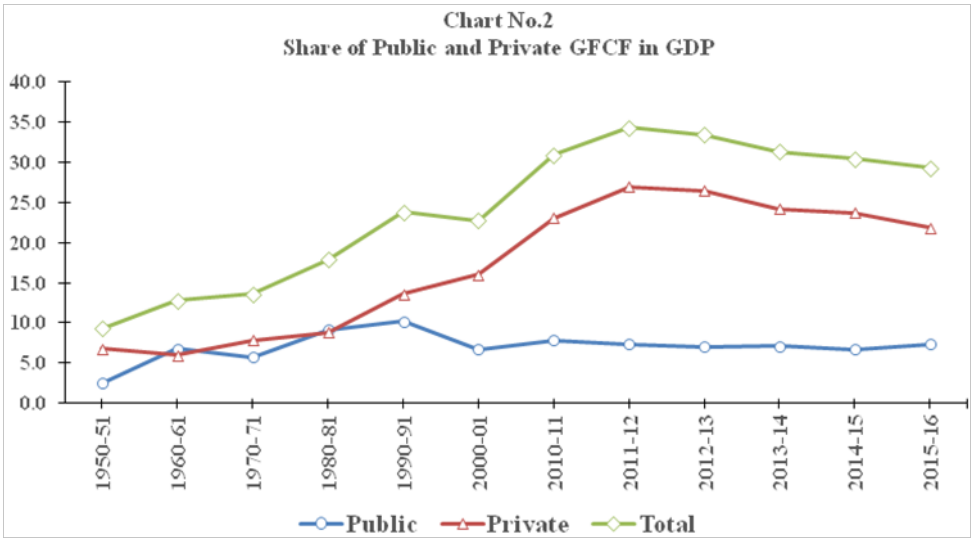


Table 2 Correlation Matrix between GFCF and GDP

	Public GFCF	Private GFCF	Total GFCF	GDP
Public GFCF	1	0.991	0.995	0.997
Private GFCF	0.991	1	1	0.995
Total GFCF	0.995	1	1	0.997
GDP	0.997	0.995	0.997	1

Note: Coefficient values are significant at 0.01 level of significance
Source: Author's calculations

Correlation matrix reveals that there is very high degree of positive correlation between the GFCF of both public and private sector with Gross Domestic Product. The correlation co-efficient values are higher than 0.990 and are highly statistically significant at 0.01 level of significance with 99 per cent confidence interval. Higher is the level of GFCF, higher will be the GDP level of the economy. Comparative outlook between public and private GFCF reveals that the correlation between GFCF incurred by the public sector and to that of the GDP in Indian economy is relatively highest with 0.997 as against the value of 0.995 in case of private GFCF and GDP. (See Table 2).

Simple regression analysis is used to forecast the future GDP of Indian economy by 2020 with aggregate Gross Fixed Capital Formation as the factor to determine GDP. The expected Total GFCF in 2020 is around Rs. 7595440 crore which is projected using Compound Annual Growth Rate.

The regression equation estimated is

$Y = a + bX$

GDP = 111291 + 3.18 * Total GFCF.

GDP = 111291 + 3.18 * 7595440

GDP = 24229365 crores

Therefore, the predicted GDP for the year 2020 is likely to be Rs. 24229365 crores. It is likely to increase by 12.11 per cent from Rs. 13682035 crores in 2015-16.

Conclusion

It is evident from the analysis that the investment spent on AI in India is more across private sector as seen in comparison with the public sector's investment on AI. Further the relative contribution of public sector and private sector's GFCF in the GDP also reveals the similar trend wherein the contribution made by private sector is quite high.The correlation matrix also revealed that there is high degree of association between the increased adoption of AI and increasing growth rates of GDP in India. The regression analysis also predicts that the GDP is going to increase by 12.1 per cent in 2020 due to the increased investment on aggregate GFCF in India. Therefore, there are positive macro-economic impacts on the growth of GDP due to increased adoption of AI technologies.

Further the recent India's budget of 2018-2019 has proposed Government's intervention in the emerging areas of AI as the part of digitisation of India. The National Institution for Transforming India (NITI) Aayog under the chairmanship of Amitabh Kant has devised national strategy for AI. It proposes to set up CORE - Centre of Research Excellence for pursuing technology frontiers to maximise production possibilities and also ICTAI – International Centers of Transformational AI to promote application based research along with private sector collaboration. Therefore, Indian economy is expected to have better prospects due to emergence of AI technologies in the near future.

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A Novel Method for Leaf Identification using Machine Learning

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Abstract

Plants play a very important role for sustenance of life on earth. The leaf of a plant is one of the significant factors to identify various plant characteristics like their species, health and even the climate. The growing interest in biodiversity and the increasing availability of digital images help us to review and analyze plant leaf. We use features like leaf outlines, shape, vein structures and textures and use wide range of analytical methods to describe the mentioned characteristics. We use image processing techniques for a set of training images to generate the feature vectors. Once the machine is trained, we apply test images for feature detection and classification of the plant species. Application of this method can be used in prototypes of hand-held digital field guides and various robotic systems in agriculture. We conclude with a discussion of ongoing work and challenging problems in this area.

Keywords: Image processing, leaf analysis, robotic systems, identifying characteristics, detection of species, digital field guide.

Introduction

The classification of leafs is very important in grouping leaves into different ranks and classes based on different classifiers or categories. It puts each group of leafs having some common properties into classes. Also the classes are then divided into sub-classes and types to differentiate among the elements of the class. This classification is very important to help scientists to study the common behaviors and properties of the leaves. Especially those leafs. Used in the medicine or medical leafs.

In the past before the invention of digital cameras and computerized systems, people were using their own absolute experience in defining different types of medical plants. The risqué of using the wrong leafs for medicine extraction increases with the lack of experience and can cause fatal error that can cause the death of some patients.

The existence of digital devices and possibilities of computer vision has encouraged the botanists and computer scientists to develop computerized systems or semi automatic systems for leafs

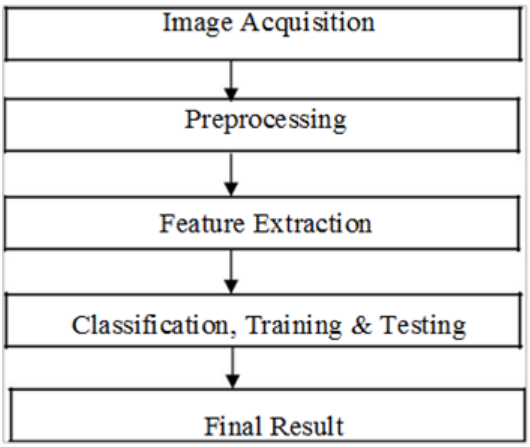
classification or recognition based on different features. Different researches have treated the problems of the leaves classification and mentioned different methods of recognition for these plants. The last century has seen a very great development in artificial intelligence and machine vision where a lots of pattern recognition and classification tasks were investigated by using automatic computer systems.

Objectives

The shape of leaves can be used to identify species and define species boundaries. Digital images of plants are increasingly available. Image processing challenges include object deformations, a large number of classes, and a large numbers of features to be selected. By knowing the feature of a leaf we can come to know that what the purpose of using that leaf in short span of time.

Image Pre-Processing

A typical image based plant identification system is shown and the major steps are explained in consecutive sub-sections.



Flow diagram of proposed scheme

Image acquisition

A leaf image can be easily captured using scanner or digital camera. The image can be of different size. However, for good results, the image should have preferably single colure background with no blurriness'. The proposed system is checked on Flavia database which contains 1907 RGB leaves images of 33 plants; each species has forty to sixty sample leaves. Each image in dataset is of 1600x 1200 resolutions having white background and with no leafstalk. File names of all images are 4-digit numbers, "and mandatory to add .jpg"

Preprocessing

In order to take out any specific information, image preprocessing steps are carried out before the actual analysis of the image data. Preprocessing refers to the initial processing of input leaf image to abolish the noise and accurate the degraded data. Images adorn techniques like grayscale, conversion, binarization, smoothing, filtering, edge detection, etc. used for the enhancement of the leaf image.

Feature extraction

Our procedure takes into describe the color and shape attribute of the leaf. Leaves of different plants are invariably similar in color and shapes therefore a single feature alone may not give anticipate results.

Color features

The procedure of image observant and retrieval proposed by Dr. H.B. Kerri mainly concentrated on the generation of the color feature vector by calculating the average means. In the proposed problem, first the three color planes namely Red, Green and Blue are unrelated. Then for each flat line of colors are calculated. The average of total row and total columns means is calculated for each plane. The features of all 3 planes are combined to form a feature vector. Once the feature vectors are produced for an image, they are deposited in a database.

Shape features

We defined shape features on the basis of morphological features and tooth features:

Geometric features

We used the alike commonly used 5 geometric features {DMFs}, illustrated is extracted from following 5 basic attributes:

1. **Diameter:** The diameter of the leaf is the height between any two points on the closed contour of the leaf.
2. **Physiological Length:** It is the length of the line connecting the two end points of the main vein in the leaf.
3. **Physiological Width:** It refers to the space between the two end points of the longest line segment perpendicular to the physiological height length and breadth".
4. **Leaf Area:** It is the number of pixels resolution of binary value 1 on smoothed leaf image.
5. **Leaf Perimeter:** It is the number of pixels along the closed outline of the leaf.

Morphological Features

Based on above 5 fundamental geometric attributes, we can define following 12 digital morphological attribute:

- Aspect Ratio: This is defined as the ratio of physiological length to physiological width that is length/width.
- Form Factor: It is defined as the changes between a leaf and a circle and is calculated by the formula $4\pi A/P2$.
- Rectangularity: It narrate how similar a leaf is to a rectangle and is computed as L. Width/area
- Narrow Factor: It determines the straightness of the leaf and is calculated as Diameter/ Length.
- Perimeter Ratio of Diameter: It is defined as the ratio of the perimeter of the leaf to the diameter of the leaf, i.e., P/D.
- Vein Features: Leaf vein forms the fundamental of leaf characterization and classification as they detail the skeletal structure of the leaf. Different variety has different leaf vein patterns which can be used in distinguishing the leaves that have similar shape. The standard method for computing the vein features is to perform a morphological opening operation on the grayscale image. A plane, disk shaped structured element of radius 1,2,3,4 is used and the

resultant image is then subtracted from the contour of the leaf. The result resembles to the vein structure of the leaves on the basis of which following 5 vein features are calculated:" A1/A, A2/A, A3/A, A4/A, A4/A1 where Ar is the remaining leaf acquire using a structuring element of radius r and A is the area of the leaf.

Classification, Training & Testing

Extensive statistical classification is the action of identifying a set of group of leafs, or classes, to which a new survey belongs, on the basis of preliminary knowledge such as a training dataset. More specifically, category in this work will be the process used to assign a certain leaf species to an image, based on its feature set., namely supervised learning. We formalize the classification elements as follows:

Classifier Selection

We obeyed two approaches to classify our datasets, which are Neural Networks and Euclidean Distance Method.

A neural network, illustrated consists of units

{Neurons}, placed in layers, which convert an input data into some outputs. Each unit takes an input, applies a {often nonlinear} function to it and then forwards the output on to the next layer. Generally the networks are defined to be move forward: a unit feeds its output to all the units on the next unit, but there is no connection between the previous layers. Weightings are applied to the signals passing from one layer to another layer, and it is these weightings which are tuned in the training stage to adapt a neural network to the particular problem at hand. This is the learning stage.

Training & Testing

Flavia dataset contains a total of 1907 images of 33 different plant types. These images were used to train the classifies. For each type of plant's leaf in flavia dataset, we selected 5 species of leaves from pilot sets which are then used to test the accuracy of the suggested algorithm in terms of efficiency and implementation time.

Conclusion

This paper introduces a neural network approach for plant leaf recognition. The computer can automatically classify thirty two kinds of plants via the leaf images loaded from digital cameras Or scanners. PNN is adopted for it has fast speed on training and simple structure. Twelve features are extracted and processed by PCA to form the input vector of PNN. Experimental result. Indicates that our algorithm is workable with accuracy than ninety percent on thirty two kinds of plants. Compared with other methods, this algorithm is fast in execution, efficient in Recognition and easy in implementation. Future work is under consideration to improve it.

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Artificial Intelligence in the Field of Healthcare and Teaching

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Abstract

The idea of imparting intelligence to computer systems and machines took its form way back in 1950's. However, its exorbitant growth has been acknowledged only recently. Artificial intelligence is everything that has not been done yet. This paper addresses the facets and challenges of artificial intelligence in the field of teaching and healthcare. This paper introduces the past, present and future of AI in the respective fields. AI has progressed through various approaches and its contribution to the society is studied in detail in this paper. Natural language processing is a form of AI that allows computer programs to process and study unstructured data (EHR). It has a major role in improving clinical documentation, trial matching and decision support. We study about the change in role of the teachers with AI marking its abilities in the teaching sector and the combination of teachers and AI to improve the education system. One of the most important effects of AI to be considered is the risk on unemployment in this fields. We analyse the various employment opportunities brought by AI in these fields. This research aims in giving rise to deeper and more diverse solutions to the tackle the challenges of AI.

Keywords: Medical Imaging, Clinical Data Support, Neural Networks, Support Vector Machine, Deep learning, reinforcement learning, Natural language processing

Introduction

Artificial intelligence is a vital element in the field of healthcare and teaching. It uses the concepts of neural networks, natural language processing, machine learning, SVM, deep learning and reinforcement learning and many more. In this paper, we discuss how these technologies are implemented in these fields and their future.

In the field of healthcare, robots are mainly being designed to assist the doctors in various ways. They can analyse data from medical records and journals and provide a deeper insight to the surgeon's instruments and judgements. They use the concept of machine learning to do so. Machine learning is basically using algorithms to teach machines to learn by themselves. One of the algorithms used is Support Vector Machine (SVM).

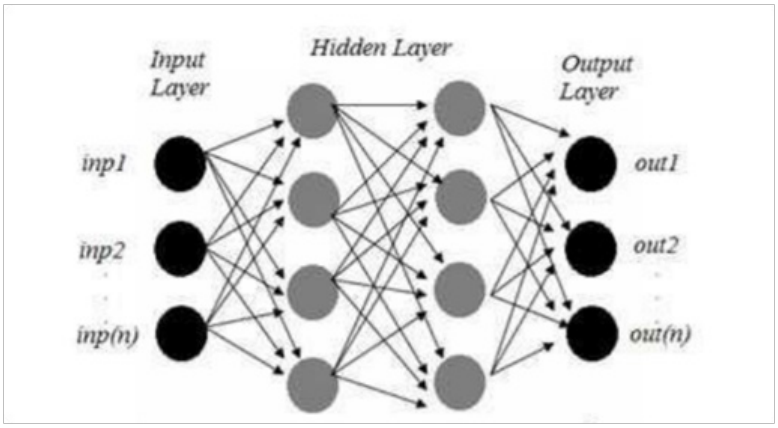
Robots can read and understand data from past operations and cases and suggest more efficient and accurate surgical techniques in the future.

A robot designed by a Dutch medical firm, could successfully perform the surgery with efficiency better than the traditional manual

method. Another role of robots in this field is medical imaging. Physicians make use of imaging to view a patient's internal system and understand its working. Machin learning and deep learning technologies help in identifying conditions which otherwise would go unnoticed by doctors as they are focused on treating the immediate health issue. Deep learning algorithms require a lot of data, and the recent influx and unavailability in data is one of the primary reasons for putting machine and deep learning back on the map. This is one of the main reasons why fields like data mining and data science are gaining more awareness and are in most demand. Yet there are some barriers, like inadequate amount of medical data available. In order to implement AI effectively in this field, these barriers need to be defeated.

Electronic medical records (EMRs) have a huge impact on health information technology and this is one of the most controversial topics being discussed. ORALS (Open Recording Automated Logging System), is a project which is currently focusing on developing and testing an interoperable system to support routine recording of patient medical visits. The fundamental assumption behind this effort is that recording such content on smart phones is inappropriate, as if the patient loses their phone, their private healthcare information could be exposed.

A recent study was published which found how the big data extracted from EMRs and digested by an AI at the University of California, San Francisco Health helped with the treatment of potentially lethal Clostridium difficile (C. diff) infections. We believe that software like ORALS will improve the future of healthcare in maintain medical data and patient medical history and records.



The amazing thing about neural network is that we don't have to explicitly teach a machine anything; it learns by itself! The idea of neural network is to simulate the working of a human brain. The way doctors look at the scans and medical images and analyse the diagnosis, we are teaching machines to analyse by themselves and assist the doctors.

NLP is one of the main concepts used in the healthcare sector. Natural language processing (NLP) can be defined as the ability of a machine to analyse, understand, and generate human speech. The goal of NLP is to create machine-human interactions exactly like interactions between humans. The machine should take a natural language and convert into artificial language. This is what is done in speech recognition. It uses statistical methods to understand what the human has said and performs mathematical calculations to respond to the same. By using various other mathematical functions and algorithms the machine responds as though a human is conversing with another.

The most famous NLP machine, the IBM Watson dominated the headlines recently because of its growing expertise for clinical decision support (CDS) for precision and cancer care. The AI

machines present now are investigating the use of natural language processing and the algorithms of machine learning to flag patients with heart diseases. Recently, Watson has scaled up the ladder and taken up the challenge of attacking cancer and advanced genomics.

A 2009 article from the Journal of Biomedical Informatics made the case for proactive CDS systems and intelligent data-driven alerts before the EHR Incentive Programs pushed electronic records into the majority of healthcare organizations, and pointed out the vital role that NLP technology would play in making that concept a reality. There are endless possibilities when it comes to improvising the working and efficiency of this field. The aforesaid are some of the ideas which will definitely ensure growth and development of healthcare worldwide.

AI in teaching has similar usages of concepts. We will be discussing and understanding few of these in the upcoming parts of the paper. The current hot topic is smart content where robots create digital content with the same level of knowledge and intelligence as their human counterparts, and this technology has finally reached the classroom. AI can help write textbooks and set question papers keeping in mind the student's learning curve and potential. A platform called Netex Learning allows teachers to design a curriculum and content across a variety of devices, including video, audio and an online assistant. Digital lectures and video conferences are also becoming a vital part of the syllabus now. The advent of "AI as a Service" allows eLearning developers to write algorithms and use AI tools and components, to perform tasks which would take a lot of time. The aim is that AI can help in improving the learning and teaching and allow schools and teachers to do more than ever before. AI can acknowledge and deliver efficiency, personalization and streamline admin tasks and allow teachers the time and freedom to introduce and develop human values and ethics where machines would struggle. The main goal for AI in education is one where, the best attributes of the teachers and machines is combined and where they work together for the best outcome for students. Since the students of today will need to work in a future where AI is the reality, it's important that our educational institutions expose students to and use the technology.

Many schools are currently training its neural network grading system in a central server that compiles the work of millions of students. Generally, a neural network consists of layers of neurons which have alternate input and output layers, respectively. The input layers receive and transmits external signals while the output layer sends out the results of the computations. There are inner ones, called hidden layers which extract relevant features or patterns from received signals. The key elements and features considered important are sent to the output layer which will present a modified and accurate output. The ability of neural network to handle complex problems depends on the number of the hidden layers. Although recent studies suggest three hidden layers as being adequate for most complex problems.

The input is the score of the students which is trained for the machine to understand. Then the topology of neural network is decided. The network is then tested with a test data set and then later implemented to analyse student records and help in the grading system. It promises an efficient way to take out the variations attributed by human subjectivity in marking.

Adjusting learning and personalized learning has been a priority for institutions for years and AI will change this face of education by making it easier to do the impossible. This type of learning is necessary as not every student has the same understanding and grasping abilities. The most important and common role of teachers in every institution is grading. The current AI technology is capable of evaluating and grading multiple choice test papers. We believe that as Ai gets more sophisticated and advanced, it will be able to grade test papers involving even elaborate/descriptive answers.

There are several companies which are currently developing intelligent devices which aim to give students the challenges they are ready for. It is also specialised for identifying gaps in

knowledge and redirects to new topics when appropriate. AI has developed platforms which can design curriculum for the academic year, with audio and video interactions and a personalized platform. As AI gets more sophisticated, it may be able to read the expression on a student's face and understand if they are struggling to grasp a subject and it will modify a lesson to suit the student's grasping abilities. However, it is important to protect this sensitive data. The main controversial effect of AI in teaching is the generation of unemployment for the teachers. But we believe that as AI gets more involved with education, the role of the teacher will not be eliminated but improvised. Teachers will not have to dedicate their precious time in performing tedious and repetitive tasks but can focus more on designing and developing the steps to effective learning and application.

Conclusions and A Way Foreward

Artificial intelligence and technology are limitless. We can drive it forward to any extent possible. While introducing new technological concepts which may entirely replace the traditional methods in these immortal fields, there are several considerations to be made. The inability of AI to possess human characteristics such as compassion is an important one. However, we believe that machines shouldn't be made to possess such abilities and technology should be used what it's best for: practicality and logic. The use of this technology raises a lot of social and ethical questions. These questions can be majorly solved if we restrict the usage to advisable limits. Therefore, AI and its expansion need not be stopped and can only get better. We need to find a way to simulate this technology which is adaptable by all and not restrict its growth in these sectors.

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Artificial Intelligence in Indian Banking Sector

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Abstract

In India Artificial Intelligence is not new this concept is from many years but the new improvement in AI Adaptation as increasing in technology. The technology itself is getting better day by day with various applications. As everyone thinks about CHAT-BOTS only as AI service but many other adaptations are there as it related to services to customer. SBI has a major role in adaptation of artificial intelligence as it is the largest bank in India (As per the Accenture Banking Technology vision 2018 Report). From decades research institutions and universities have been working with various AI technologies especially in the field of Social Transformation. In Banking Sector the AI reduces the cost for customer interaction and increases there efficiency.

Keywords: Adaptation of AI in Mobile Cheque Deposit by customer in ICICI Bank, Self Passbook Printing Machine by Customer itself, Cash Deposit Machine installation by banks, and other AI robots in banking Sectors.

Introduction

The Research is fully based on Primary source (survey based on Employees of bank and Customers). The research is aim toward the opportunities and other drawbacks of AI in banking sectors. The Survey form is attached to the paper at last. Major Bank Taken for survey: Canara Bank CANDI Branch M.G.Road Bangalore.

Technology in India is increasing day by day in banking sectors. As the number of customers increasing AI adaptation also increasing but it is not new to India in technological field. In the branch it is the first Digital where they have adopted robot "CANDI" to provide an end to end digital experience to the gen-next customer.

The bank provides every facility as other bank provides but the difference here is fully upgraded with Robots. The survey has taken on the basis of primary data at Canara Bank M.G.Road, Bangalore.

I have visited the branch where the robot will explains the information about branch. The manager of CANDI Canara bank explained that the branch is opened for the basically IT based people in M.G Road where they can use the banking facility from morning 08.00am to 08.00pm at night. The bank is fully digitalized and Robot is helps in using the Digital systems.

Objective of the Study

- To know about the usage of Artificial intelligence in India
- To get aware about the merits and demerits of Artificial Intelligence.
- Numbers of people aware about AI
- Drawbacks of Artificial Intelligence.

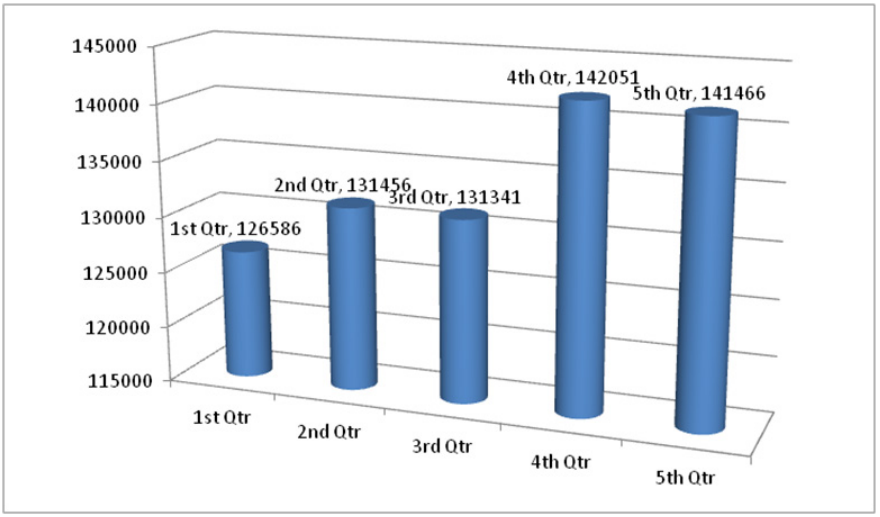
In my research of CANDI Canara Bank M.G Road Manager Mr. Justine J Mathew explained me about the usage and implementation of Robot for the help of customer in their branch.

Observation

I have observed that the bank is suitable for only those people who knows about the digital process of bank and people who don't know about digital process of bank for them ROBOT is Installed where they can ask the queries. The list of segment wise deposit is given below:

Parameters	June 17	Sep 17	Dec 17	Mar 18	Jun 18	Growth (%)
Total Deposits	485905	496440	503888	524722	533274	9.75
Current Deposit	22489	23623	23245	24894	21185	(5.84)
Saving Deposits	126586	131456	134341	142051	141466	11.75
CASA Deposits	149084	155080	157586	167035	162651	9.10
Term Deposits	336821	341360	346302	357737	370622	10.04
RTD	207180	213258	214848	212800	214094	3.30

The saving deposits diagram shown in the below diagram as in increasing continuously



Methodology

I have used the methodology of collecting primary Data from CANDI br and some secondary data from newspapers and other international journals. In the research it found that the method of survey is suitable for this and I have spoken with some of the customers of Bank that how they are getting the facility of Bank.

Artificial Intelligence in other field

As per the latest information Japan is adopted Artificial Intelligence in Teaching. It is reportedly cost of a $227,000. 500 children's in Japan will get the English- Speaking robots. The move comes ahead of a chance in the national curriculum in two years that will require children from the age of 10 to learn English. This implementation is because of lack of teachers in school level in Japan. Japanese schools struggle to find qualified teachers for English classes and lack the cash to hire trained assistants. Some primary schools already turned to technology, introducing English-speaking robots in the classroom. As English classes are compulsory for Japanese student aged between 12 and 15 and starting age will be reduced in 2020

Budgetary pressures may lead to search for technological solution by policy makers in education. The quote from Steve jobs, Apple co-founder- "The most important thing is a person. A person who incites your curiosity and feeds your curiosity; and machines cannot do that in the same way that people can.

Conclusion

As compare to other nation India is also in the same track in adopting the Artificial Intelligence in various fields like Bank, Hotels, and other places. The main problem in India in SERVER which is not supports very time as in my research found many times CANDI Robot hangs as it needs server backup and another problem is that the Employment to human will reduce as Robots comes in the field. Every work cannot be done by ROBOTS but some places where ROBOTS can take place of Human.

References

Articles from Steve Jobs, Co-founder of Apple Company, edition 10.07.2018, Indian Express, Bangalore

Customers of CANDI branch M.G Road for survey on AI

Live mint.com/AI on 28.07.2018 report on AI used in etching field

Mr. Justin Mathew, Manager, CANDI Canara Bank as on 24.07.2018 MG Road, Branch, Bangalore