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ROLE OF ARTIFICIAL INTELLIGENCE IN BUSINESS TRANSFORMATION

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ABSTRACT

Artificial Intelligence has made a mark of its own on every sphere of business organizations. The future is going to be more of machines rather than men. Every business enterprise is striving to be in the race by adapting to the changes that is challenging the change itself. AI is one such change, and it is becoming mandatory to brace AI if one wants to sustain for a long time. The onslaught of AI has brought lot of changes in the way in which the business is being understood and done. There is going to be a sea change in the outlook of business enterprises while adapting to AI. This paper is an attempt to identify the impact of AI on the organization and departments specifically.

Keywords: Artificial Intelligence, Change, Machines, Men, Sustain

INTRODUCTION

Background of the Problem

- **About Business Challenges**

The top challenges of any business today are customer service, having right talent, sales of the product, and managing finances. Although, technology is being utilized in all the aspects of these, an optimized and technically advanced platform is very much required. Artificial Intelligence (AI) being the leader in the technological world, it can address the above said issues.

As simplification has become mantra for businesses for serving the customers in an unbelievable way, many of the innovative ideas have come into the place and Artificial Intelligence (AI) tops in that list. Although AI concept is not a new one, but it drives the businesses in a new dimensional in the last few years. The term AI might appropriately stand for 'Amazing Innovations' is not a wonder (Elliot & Andrews, 2017).

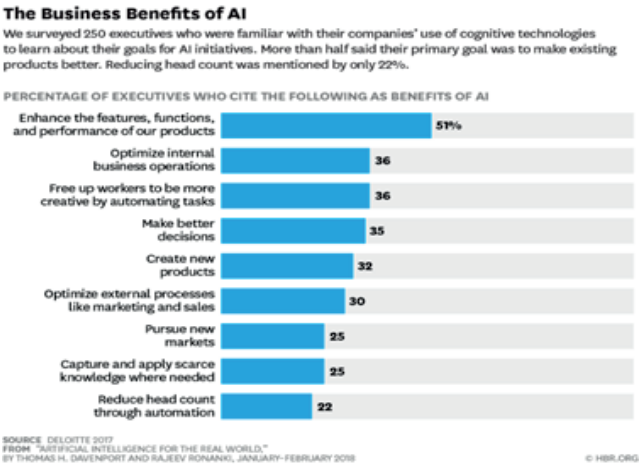
As AI is going to rule the global businesses the next two decades by not just reducing the routine manual tasks, but also bringing the most efficient way to every business problem to deal with. As 84% of enterprises believe investing in AI will lead to greater competitive advantages (Columbus, 2018) the remaining enterprises are looking at the prospective of implementing it.

Businesses can make effective decisions only when they get a meaningful data from their customers. As there is no limit to extract the data, but understanding the data is a real challenge. AI will play a significant role in making the data so meaningful. Twenty percent of 1,000 U.S. business executives said their companies plan to implement AI across their enterprise in 2019, according to new research from Pricewaterhouse Coopers (PwC).

- **What does the current spend on AI by Corporates?**

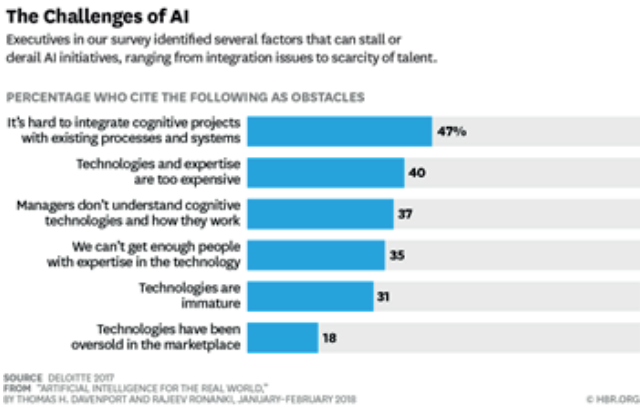
As AI is evolving heavily, some of the corporates have been started investing in their businesses. According to IDC, a 50.1 percent compound annual growth rate for global spending on AI, reaching $57.6 billion by the year 2021. This spend is in the domains of banking, healthcare, and process industries predominantly and will represent over half of worldwide spend on AI (Rudder, 2018). Morgan Stanley is on average expect their information technology spending to rise 5.8% this year, per investors article. Some of the investors are waiting on the profit outcomes of already-invested businesses. However, worldwide spend on AI will grow to $19.1B according to IDC (Seitz, 2018). As the goal of businesses to be no-human-intervention, the list of benefits is huge. Below picture shows some of the benefits that can be seen for the optimization. Although Artificial Intelligence is to replace the repetitive manual tasks, the list of benefits is amazing (refer to figure 1). It can enhance the business to see the best optimized results, the freed-up resources can focus on some strategic events for the organization. It can also allow to add more products with a simplified value chain.

Figure 1: The Business Benefits of AI



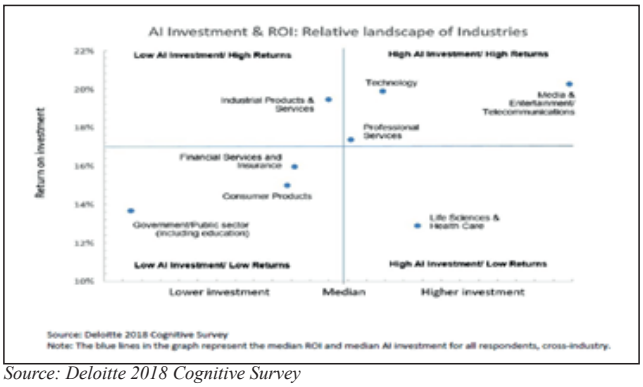
Although, there are tremendous amount of benefits we notice using AI, the challenges are also be in the same lines as its evolving. In addition to the listed challenges below, a high demand of getting skilled resources to work on these is still a challenge. The schools are still trying to accommodate in their curriculum to build the skills and lot of opportunities are being built for research and development to generate more interest. The below are some of the top challenges industries are facing at, the first one is hard to integrate AI projects (refer to figure 2).

Figure 2: The Challenges of AI Implementations



As a solution provider business problem, we have implemented AI to automate the invoice process which is a daily routine task we do. Although the process automated, there are other areas using AI to interpret the data to come up with a meaningful business decision for customers. For example, if a customer searches for a movie for more than 90 seconds then they give up according to Forbes (Davenport & Ronanki, 2018). Implementation of these systems will significantly improve the sales strategies according to customer needs. Due to the lack of skills to implement at an Enterprise level, AI journey is not going smooth as we see. As per the latest reports from Deloitte's 2017 State of Cognitive survey, only 6% of business enterprises are having a smooth ride with AI. This leaves a staggering 94% that face challenges in implementing an AI solution to its enterprise. Here are the top challenges that enterprises face while implementing an AI solution to its business process (Some, 2018). The below diagram shows the investment made on AI and ROI from it. From the below picture, it shows that how the low and high investments on AI is being used in different industries or services and their corresponding returns from it. The technology and professional services have a high return using high investment as they have the direct impact on their businesses to be modernized. The below picture shows how different levels of investments and ROIs can be seen in the different quadrants of the industries. By looking at the below diagram (in figure 3), the business can look for different options.

Figure 3: AI Investments and ROI in Business

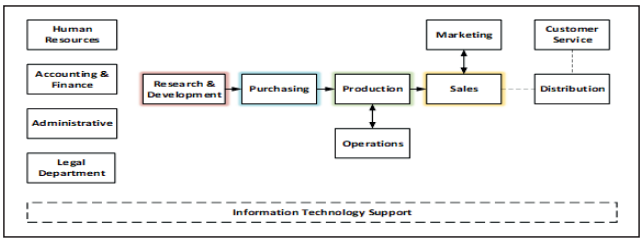


Source: Deloitte 2018 Cognitive Survey

How AI can be seen in the business

A detailed picture of the departments of business is important to understand where the processes are currently at. Also, we can spot out which departments can be automated using AI solutions. Not every department can be automated depending on the outcome of their services and confidentiality. However, the below figure 4 shows the opportunities of AI implementation.

Figure 4: The Functional Areas of a Business



Various departments required in the business organization were shown above and where AI can improve the operational efficiency. When these are taken care, employees can focus on strategic activities to improve the product line or better selling strategies. As per Gartner 2017 report on Framework for Applying AI in the enterprise (Elliot & Andrews, 2017), these departments can be seen in the list. Research & Development is the key department for any business to run their innovative ideas to differentiate themselves in the market, which can trigger purchasing raw materials from the suppliers to produce the final product. Once the product is ready for market, Sales can take it to market and district. All these departments are supported by Human Resources and every department plays a key role in the success story. Every department is enabled for AI implementation.

Research Problem

Simplification and best customer service with all easy options available for customers is the primary objective for any business. Some sort of automation has been in place by implementing tools for the repetitive tasks, but AI brings a lot of innovation to the business problems. In order to give the best benefit, this study addresses how AI is useful and yield the high optimization to the business processes and in turn profitability.

Research Objectives

The objective of the research is to address the gap identified above in full potential of Technological implementation. The purpose can be general and specific. The objectives are further divided/classified, so that it can be better determined how AI helps simplifying complex business situations using technology, how it can allow the businesses to focus on new products or any other strategic events.

- To study different organizations in the business such as customer service, managing finance, and focus shift on strategic work than repetitive tasks
- To study how to tap the right talent
- To study how AI can improve the business performance
- To study how manual process will have an impact on businesses
- To analyze the results of the business before and after AI implementation

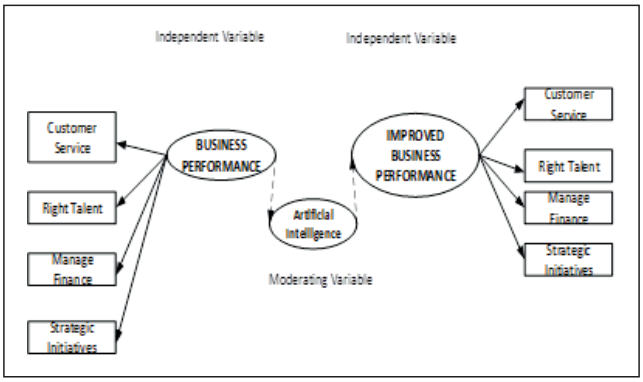
Research Questions

The study will address the below questions based the objectives set earlier:

- How many businesses have already started implementing AI?
- What is the ROI before and after AI?
- How many departments have not implemented AI?
- Is there any impact on their performance?
- If there is any, what is the specific element in AI practice that helps businesses?

Conceptual Framework

Figure 5: Conceptual Framework to Show the Elements of Business Performance



The above figure 5 explains the phenomenon of how the business performance can be improved in certain aspects of the business. Some of the core elements of the business are customer service, right talent, managing the finances, and strategic initiatives. Having the right talent is the key to any successful business as it kicks off the strategic initiatives which is the differentiator in the market. After gaining the customers, serving them to fulfil their needs is the paramount important task to sustain in the business as it has immediate impact on the incoming business. Although the three elements appropriately, managing finances is everything as it drives the business. The diagram depicts the importance of Artificial Intelligence in these aspects where possible in order to improve business performance. As there are many repetitive tasks in these four aspects, AI can be a good candidate for optimizing them.

Scope of the Research

Keeping the profitability and operational efficiency as main objectives, Artificial Intelligence gets full attention. Implementation of AI in the organizations is becoming a way of business than having an optional

these days. The entire business era is loaded with the technological advancement and along with the profits they foresee in the future. To analyze the secondary data for this study, the duration is of a year of 2018 which is already available.

Significance of the Research

The research findings from this study will significantly be beneficial for all businesses of any size. The implementation of AI will significantly improve the operational efficiency and start reflecting on the profitability. When the repetitive tasks get automated and customer service is provided by automation systems, workforce can focus more on strategic initiatives.

Organizational excellence relies on qualities within the workforce (Irani, Beskese & Love, 2004; Lockwood, 2007). Organizational innovativeness and organizational development are the two best advantages meditation gives to the organizations. While organizational innovativeness plays a decisive role in business success, talent competency is an asset for organizational development (Zaugg & Thom, 2002). Many of the CIOs and CEOs have been considering implementing AI in their organizations. This would help them to build a stronger organization which is much more operational efficient.

RESEARCH METHODOLOGY

Research Strategy

A research strategy will help meeting the research objectives outlined for the study. Picking up the appropriate strategy will depend on the type of questions addressed. It also depends on the data sources and timelines set for the research topic. Between the two popular research strategies Probability and Non-Probability (Zikmund *et al.*, 2009), one deals with the known sample and other one is pretty much unknown.

According to (Zikmund *et al.*, 2009), Quantitative business research can be defined as business research that addresses research objectives through empirical assessments that involve numerical measurement and analysis approaches. Quantitative researchers direct a considerable amount of activity towards measuring concepts with scales that either directly or indirectly provide numeric values. The numeric values can then be used in statistical computations and hypothesis testing.

On the other hand, qualitative business research is research that addresses business objectives through techniques that allow the researcher to provide elaborate interpretations of market phenomena without depending on numerical measurement. Its focus is on discovering true inner meanings and new insights. Qualitative research is less structured than most quantitative approaches. It does not rely on self response questionnaires containing structured response formats. Instead, it is more researcher-dependent in that the researcher must extract meaning from unstructured responses, such as text from a recorded interview.

Out of all the research strategies, Survey works well for this research as Survey is a system for collecting information from the participants to explain their knowledge, attitudes, and behavior (Fink, 2003). This study is based on quantitative strategy because the purpose of this study is testing hypotheses, the method for data collection is a questionnaire, the nature of reality is objective, and the data will be analyzed through statistical analysis.

Purpose of the Study

According to Sekaran & Bougie (2013), studies regarding the main purpose may be either exploratory in nature or descriptive or may be conducted to test hypotheses. An exploratory study is undertaken when not much is known about the situation at hand, or no information is available on how similar problems or research issues have been solved in the past. While a descriptive study is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation. In addition, studies that engage in hypotheses testing usually explain the nature of certain relationships or establish the differences among groups or the independence of two or more factors in a situation. Hypothesis testing is undertaken to explain the variance in the dependent variable or to predict organizational outcomes. The main purpose of this study is to examine the causal relationships between variables through hypothesis testing.

Unit of Analysis

The unit of analysis refers to the level of aggregation of the data collected during the subsequent data analysis stage, and the choice of the unit of analysis depends on the research problem, and there are a different type of the unit of analysis (individual, groups, and organizations) (Sekaran & Bougie, 2013). This study is based on the organization as a unit of analysis, because the problem statement addresses the business profitability of the department by implementing AI. The

data comes from the individual department.

Population

Population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate (Sekaran & Bougie, 2013). The population of this study are the departments which are enabled by AI in the business. The data will be collected from HTC which is an IT services company.

Sampling Techniques

Stratified random sampling an efficient research sampling design; thus is, it provides more information with a given sample size. Since the population in the sample company is reasonable and there is a limitation of number of people responding to the questionnaire. Hence preferred to adopt to random sampling technique.

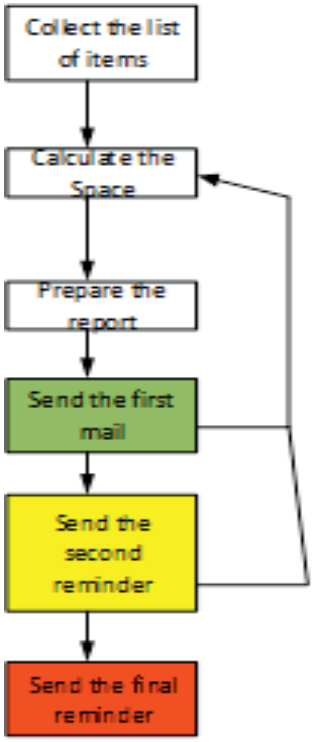
Data Collection Methods

Secondary data has been used for the research from an existing database to analyze a deep level of the benefits an organization gets. A detailed study has been done to understand the elements of AI which can be used at different departments. Some of them can be addressed by Robotic Process Automation, some can be by Face recognition systems, Speech analytics, and Machine Learning algorithms.

CASE STUDY

One of the AI solutions implemented to the customers has been described here. An established process to calculate the hard disk and memory size for several test environment deployments used to be executed manually. Three weeks prior to the production date, the team used to collect the component list and calculate space requirements to deploy them into the test environments manually. After gaining the size, the team used to send out the emails to the application owners to create the space for smooth deployments, but never used to have luck. As per the policy, the team used to send three reminders to the owners and even the last day runs into the issues. The whole process used to take 90-man hours. Through the implementation of AI solution, every level was automated. When the components list is ready, it gets fed into the system and all the calculations will be done by the tool and reports will be sent to the management automatically including the three reminders. Space calculation will also be done in between the reminders to make sure that someone responded to the emails. By implementing this solution, the work effort has come down to less than 30 minutes for the whole thing. As this process needs to be done every month and very cost effective. This effected so positively, and customer spent the remaining time to the strategic events. This was appreciated by the top management and it saved a lot of money too.

Figure 6: A process diagram in Software Testing Department



In the above diagram (figure 6), the old process gets a request on a regular basis from the stakeholder to deploy some components in to the test environment. There are times where you don't have enough space in the required areas, so the technical team must request for additional space in it. Since it is a cost-involved effort, it requires many approvals to get the tasks complete. It involves many reminders as well. Since it is a repetitive manual task, it was identified as a good candidate for AI implementation. It took 90 hours while doing manual work & new Process took 30 mins after implementing AI solution. Another solution implemented to handle the service tickets of the help desk. There used to be 3 resources in each shift to serve customers 24x7. This solution was product implemented for a client has reduced the number of resources to 2 to handle all their help desk as AI algorithms can read and respond to any of the question's customers ask for. The freed up 7 resources were assigned to another critical work which optimizes the operational efficiency. We have suggested another solution to a customer to reduce test management costs by implementing an AI based Test tool. The current process takes about 167 hours to complete a test cycle in an application. By implementing

the AI based test tool, it takes only 56 hours which is 88% cost savings for the customer. This brings not only no human intervention but a flawless process.

DISCUSSION

As Artificial Intelligence plays a major role in today's business, we have done a lot of research on studying the benefits and strategies to implement AI in business. Along with AI being the trending technology to benefit businesses, there are quite a few challenges also in implementing them. The list of benefits for any business through AI implementation are in a big list. Operational efficiency and Strategic initiatives are the two key things we can think of while implementing AI. All the big players have already started implementing AI in their business to be ahead of the game, but whereas others are just watching on the outcomes of the businesses. Media is one the best beneficiaries of AI in their business as viewers change the channel after 60 seconds if they don't like it. All the manually repetitive tasks can be automated, and the resources can be utilized elsewhere with a focus on business benefit. Other businesses are watching the process of AI implementation to make their minds. As per Gartner 2017 report on Framework for Applying AI in the enterprise (Elliot & Andrews, 2017), R&D, purchasing, finance, sales, and distribution departments along with Human resources, legal, and accounting as another list of departments. Due to lack of skills to implement at an Enterprise level, AI journey is not going smooth as we see. As per the latest reports from Deloitte's 2017 State of Cognitive survey, only 6% of business enterprises are having a smooth ride with AI. This leaves a staggering 94% that face challenges in implementing an AI solution to its enterprise. Here are the top challenges that enterprises face while implementing an AI solution to its business process (Some, 2018).

As a provider of IT services, they always think on how to automate the tasks for customer. AI strategy must be tied up with Business strategy (Marr, 2019) is the first step in bringing AI in to the business. By looking at the above departments diagram, we can prioritize which department can implement first and next and so on. As per the latest reports from Deloitte's Survey (2017) State of Cognitive survey, only 6% of business enterprises are having a smooth ride with AI. It is very important to pursue the AI capabilities internally, otherwise building the skillset is the most important step in implementing AI solutions for any business. This paper documented the current business challenges and how the C level perceives the changes that AI can bring in to the business transformation, along with references to several research material. We also documented which ones can enable AI implementation and which cannot, so that we don't have to invest time and money in it. In the conclusion, it was mentioned about the challenges faced in AI implementation.

CONCLUSION

As learned from the above solutions, AI has significantly shown the cost savings to the business by reducing the manual work along with improved operational efficiency. These implementations are so helpful to configure to other systems when they implement any upgraded technologies. So, the maintenance would also be easier to handle any dependent upgrades. Although AI is more beneficial to the businesses, there are some known gaps that need to be filled in, one of them is skilled-workforce. There is no enough workforce to implement AI solutions for the businesses.

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