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Business process management and its future

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ABSTRACT

For any enterprise operations, it has always been at the heart to optimize its business processes. And with the allure to serve organizations in achieving operational excellence, increasing productivity or saving costs, there has been growing interest and boom in Business Process Management (BPM). And as there is growth in sophistication and Artificial Intelligence (AI) becomes more cost-efficient, there has been an increasing impact of AI from lower-level functional tasks to the highest levels of enterprise restructuring in BPM. With significant growth in machine learning and AI, we can expect it to have a greater impact on BPM.

Keywords: *BPM, Business Process Management, Impact of AI on BPM*

1. INTRODUCTION

To optimize the operations and achieve the desired business goals, BPM is used extensively by industries. And with Low-code BPM platforms where applications can be created and delivered rapidly to the business as per the requirements of the project and with benefits such as lower costs as there is a reduction in coding and testing, prototype acceleration, simplified patches and updates, easy UX design, etc. All these advantages drive the market size and use of BPM.

Factors that add to the growth of BPM is technologies like machine learning and artificial intelligence are integrated with BPM software, which reduces manual errors using automated processes and improved systems for dynamic business requirements. And with the increasing demand for higher productivity and BPM software implementing Robotics Process Automation (RPA) to automate tasks that are repetitive, lower-valued and manual. It will make organizations more responsive, flexible and profitable and enhance the work for employees.

Appian is one of the top leaders in the market for building application and workflows rapidly using low-code automation technology. On January 7, 2020, Appian announced that they acquired Novayre Solutions SL. Novayre Solutions SL are the developers of the Jidoka RPA platform, the high rated software in Robot Process Automation. With this, Appian customers benefit from a comprehensive automation platform that attracts more organizations to adapt such BPM tools.

2. BUSINESS PROCESS MANAGEMENT

Business Process Management or BPM is a method to improve the processes in an organization and standardize them. It is used to eliminate the errors made by human and improve the effectiveness of the system. BPM manages to harmonize the conduct of people, systems, and information to produce results that will help in making business strategies.

BPM focuses on making the process consistent and automate it to reduce human interactions. It helps in reducing the operational costs of the organization by decreasing waste or rework [1].

It is a systematic method that helps to make the business process of an organization dependable and effective. Organizations are making use of BPM to remain competitive in the market and increase the efficiency of the process. Some of the benefits of BPM can be better visibility, reduced cost, improved business agility, etc. [2].

The important success factors in implementation of BPM can be:

- To understand the benefits to the business by using BPM.
- Expertise on the complete capabilities of the BPM platform to meet the requirements of the business.
- To involve the business users through continuous feedback loop using Agile methodology.
- The architecture, best practices, and design of the BPM platform to ensure scalability, security, and maintainability.
- Minimized customization by using the features of the BPM platform as opposed to writing additional code [2].

3. ARTIFICIAL INTELLIGENCE

Artificial Intelligence or AI refers to the replication of human intelligence in machines. These machines are programmed to have a thought process like humans and also mimic their actions. The term can be associated to any machine that exhibits traits related to a human mind like learning or problem-solving [3]. It is the computer's ability to perform duties that are commonly associated with smart beings. The term is constantly applied to systems with the intellectual characteristic of humans, such as to discover meaning, the ability to reason, learn from the experiences of the past or to generalize [4].

4. MACHINE LEARNING

Machine learning is a technique through which analytical model building can be automated. It is a part of Artificial Intelligence (AI). It is formed on the idea of systems learning from data, identifying patterns and making decisions. Artificial intelligence (AI) is the broad aspect of science dealing with mimicking the human abilities, whereas machine learning is a part of artificial intelligence which trains a machine how to acquire knowledge. Machine learning is an iterative process. As new data is discovered by the model, it helps them to adapt independently. They learn from previous computations and help to produce reliable decisions and outcomes [5]. ML can be classified as supervised or unsupervised. Supervised ML algorithms can utilize the knowledge gained from past and apply it to the new data by using labeled examples for forecasting future events. The learning algorithm is able to analyze the actual output with the intended result to identify mistakes and make necessary changes to the model for future use. Unsupervised ml algorithms are utilized to train the model with unlabeled data. It tries to find hidden structure or pattern from unlabeled data. The system may not figure out the correct output, but it explores the dataset and draws inferences from it to find the hidden structures [6].

5. IMPACT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING ON BPM

Artificial Intelligence has an impact on all levels of BPM, from the functional tasks and automation of process to decision-making. Machine learning and AI helps BPM to become a strategic pillar that enhances the lives of the staff as well as the customers of an organization. BPM focuses mainly on the internal operations of an organization. By the arrival of AI, organizations can gain understanding from the vast information available and use that to improve the efficiency of BPM.

AI is not only used to represent information and suggest the required actions, but also to implement changes in operational processes. BPM with the help of AI and ML can gain a deeper understanding of why certain business decisions were made and apply advanced analysis to find a better and optimal result. With the growth of AI, Business Process Management can benefit a lot.

5.1. Process Scheduling

Process execution can be done with the aid of machine learning. An example of it could be that a BPM software could initiate a process or redirect an ongoing process based on the predictions. After the predictions are made using ML, the Business Process Management quickly reacts, for e.g., update of forms, reallocation of tasks, etc.

5.2. Decision's Recommendation

Many decisions have to be taken in the day-to-day life of CEO's, managers, etc., for example, approving or rejecting a proposal. Machine learning is helpful in situations where the final decisions have to be analyzed in a sophisticated manner. ML algorithms like decision trees or neural networks can be utilized for finding the best decisions.

5.3. Recruiting

The HR department can also utilize machine learning techniques. By using natural language processing methods, the HR department or the recruiters can examine the resumes of the candidates and generate summaries for the same. ML techniques could also be helpful in predicting how a candidate will adjust with the company's needs by getting additional data about the candidate through more interviews.

5.4. Project Management

Project Management could be automated by intelligent Business Process Management with the functionalities of machine learning. Tasks could be assigned to the apt team member, and corrective actions could be recommended to complete the tasks before deadline.

5.5. Marketing

Machine learning can also be utilized in marketing. ML can be used for achieving a successful strategy for marketing. An example of it could be that many hours are regularly spent by the marketing and sales teams for figuring out the leads with the highest value targets for the campaigns. BPM tool can be taught how to navigate through the lead dashboards for finding the most significant targets.

5.6. Process Mining and Machine Learning

Process mining is a part of process management field. It helps in the analysis of business on the basis of event logs. It is a trend aiming to improve the efficiency of the process. Future predictions can be made from the data that arises from process mining. An example of it is that performance of the process could be monitored after evaluating the flow of cases from this process till they are not completed [10].

6. FUTURE OF BPM

The worldwide market of BPM was 10.64 billion dollars in the year 2020, according to Fortune Business Insights. Based on their analysis it was found that the global market of business process management showcased a substantial growth of 11.2 percent in the year 2020 compared to the growth during the period of 2017-2019.

During the period of 2021-2028, it is expected to see market growth from 11.84 billion dollars to 26.18 billion dollars at a CAGR of 12 percent. BPM has witnessed a significant growth amidst the pandemic.

The BPM market is prospering with the increasing necessity of organizations to digitize their business processes for achieving customer satisfaction and goals of the company. During this pandemic, organizations are seeing at BPM as the key factor of digital growth which will help in the growth of the market [7].

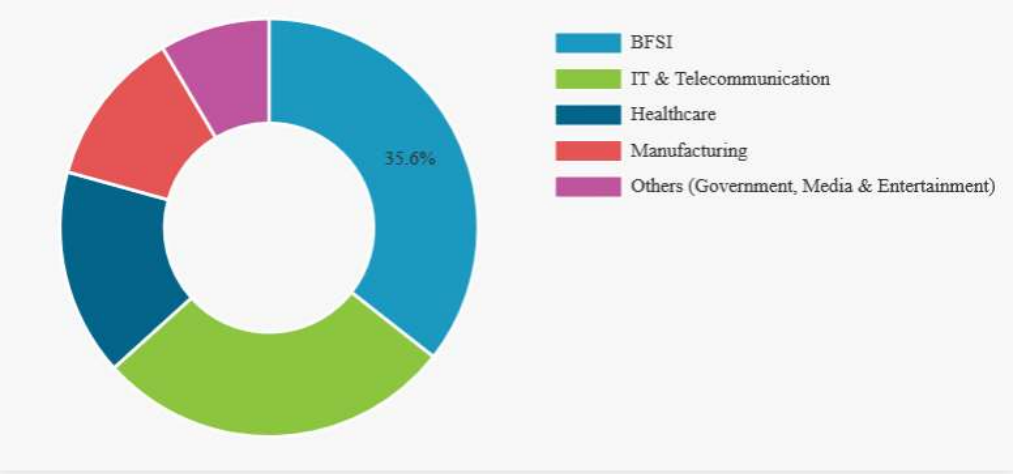

Fig. Business Process Management (BPM) Market share by industry, 2020

Healthcare organizations are significantly using process management as a solution to improve the process and also as a platform which helps them to challenge the diverse factors related to process improvement. These factors include improved quality of service delivery, better management of revenue cycle, etc. Healthcare industry is estimated to adopt BPM on a large scale and projected to have a healthy growth. (Market share approximately 15.5%)

The development of internet banking, checkbook, mobile banking, etc. has led the banking sector and the financial sector to accept the business process management tools. BPM is used by banking industries to support and manage processes, like procurement, filing lawsuits, contracting, etc. Financial services and banks use analytics on the credit histories of small businesses and their owners, supporting the adoption of BPM. (Market share approximately 35.6%)

In IT and telecom industry, the adoption of BPM is mainly associated with the growing emphasis on improved customer service, business visibility, and operational excellence. The manufacturing plants can implement process management systems for managing assets, field services, permits, projects, and planning and execution for turnaround. (Market share approximately 27.5%)

Other industries such as public, retail, etc. are also going towards the era of digital transformation with the adoption of BPM platforms.

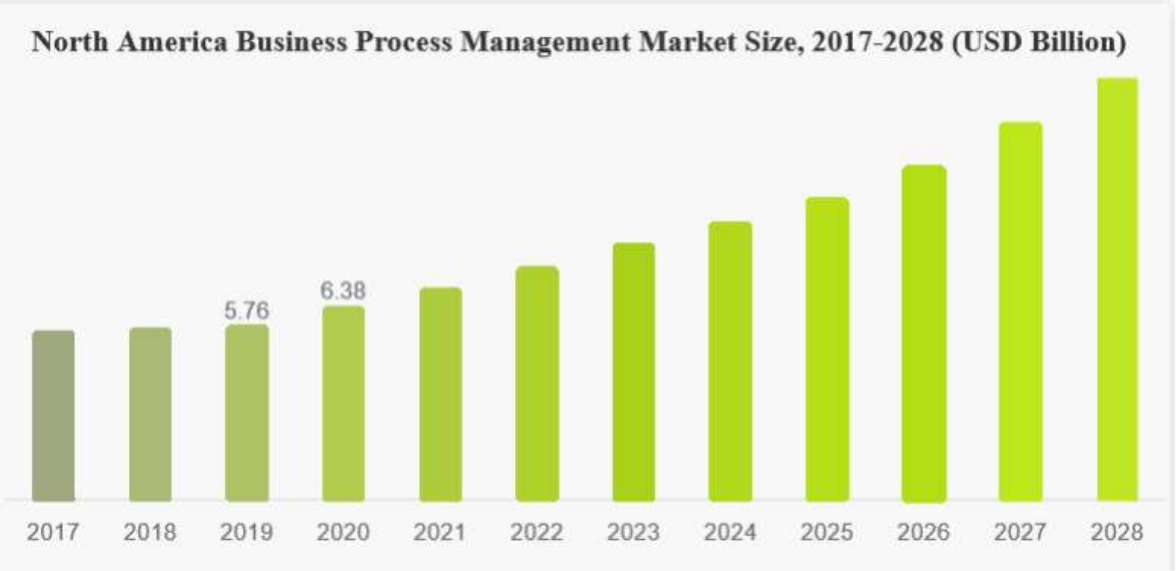

Fig. BPM market share of North America

The largest market share is attained by North America and is expected to dominate because of the high usage of advanced technologies in business operations. The adoption of business process automation is increasing in the U.S.

Significant growth of the BPM market is expected in Asia-Pacific as outsourcing of process management services is operated in the region. One of the prominent countries in this region is India, which provides outsourcing of IT-BPM services.

Europe is expected to rise significantly in CAGR in the forecast period because of the high demand for BPM software. BPM software makes it easier to streamline the processes of their business enabling them to adapt to the market conditions. The United Kingdom and Germany have emerged as leaders in the BPM Industry [7].

7. CONCLUSION

Effects of new technology, new trends and forms of analysis, and the growth of Automation in BPM will keep it fresh and focused. AI is making intelligent business process management an opportunity for organizations to grow. With continued improvement in adaptive automation with machine learning, powering technologies like RPA and advanced workflows bringing agility and flexibility to the organizations, a new era of BPM can be envisioned.

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