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Digital Transformation with SAP Hana

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Abstract : There is a significant reliance on digital technologies for innovation within the pharmaceutical engineering, medical device manufacturing, and biotechnology/biomedical engineering subsectors of the life science business. The life sciences industry has been notoriously slow to accept and implement digital services across the whole value chain, beginning with research and development and continuing all the way through commercialization. The most recent experience during the COVID-19 pandemic emergency proved that the life science business is the most crucial and time sensitive. Now, though, SAP has taken this on as a challenge, and its S/4HANA platform helps businesses in the life sciences digitally modernize their processes. Through the utilization of digital technologies such as blockchain, cloud computing, artificial intelligence, and the internet of things, the fourth generation of pharmaceuticals (Pharma 4.0) aims to enhance both transparency and efficiency by connecting patients and systems. Through the utilization of the robust SAP NetWeaver platform, you have the potential to lower your total cost of ownership by combining SAP with applications that are not SAP. In the following paragraphs, we will discuss the benefits and drawbacks of SAP S/4 HANA, as well as the manner in which it is transforming the life science business. Smart cloud ERP can accomplish a great deal of change. Time to value, security, compliance, scalability, ongoing innovation, and the capacity to integrate with other technologies will also be highlighted. Automatic and continual updates will also be provided.

Key words: *SAP, HANA, Digital device, Integration.*

1. INTRODUCTION

The adoption of digital transformation has evolved into an unavoidable requirement for all firms, irrespective of their size or the industry in which they are active. In today's world, organizations are required to constantly innovate in order to meet the demands of their customers. Furthermore, as the expectations of customers continue to rise, the technological skills of a firm must also continue to grow. Adaptability and the ability to innovate are becoming the new standards, and in order to maintain a competitive edge, it is necessary to determine the appropriate business solutions that will allow your company to expand along with it.

This results in a desire for technology that can keep up with the rapid pace at which ideas are developed. There are a lot of reasons why the digital transformation of the healthcare industry, particularly with SAP S/4HANA Cloud, has grown more significant in the life science sector. Some of these reasons include the following:

Costs Relating to Research and Development The rising expenses associated with the development of new drugs present a substantial obstacle. By providing real-time insights and data, SAP S/4HANA Cloud enables health care firms to increase their research and development (R&D) efficiency, hence enabling them to make more informed decisions regarding medication development and resource allocation [1].

Protecting intellectual property is of the utmost importance in the health care business, particularly in light of the large investments that are necessary for the development of new drugs. Some of the data security measures that are improved by SAP S/4HANA Cloud include advanced security features, data privacy controls, and safe data management [2]. There are also better data security measures.

Management of the Supply Chain That Focuses on Streamlining There are a lot of intricate procedures and a variety of diverse parties involved in the management of the supply chain for pharmaceuticals. In the end, greater supply chain management is achieved as a result of the utilization of SAP S/4HANA Cloud, which offers real-time visibility into inventory levels, enhanced demand forecasting, and optimized logistical procedures [3].

Improved Confidentiality of Data: A concern that has grown highly essential is the security of data that has been collected, which has gotten more prevalent as the usage of digital technology continues to expand. Data encryption, identity and access management, threat detection and response are just some of the sophisticated security capabilities that are available with SAP S/4HANA Cloud. Other capabilities include threat detection and identification.

These features help to significantly strengthen data security measures. In order for pharmaceutical businesses to stay ahead of their rivals, it is essential for them to foster innovation. As a result of its ability to support collaboration, knowledge sharing, and Agile development methods, SAP

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S/4HANA Cloud gives businesses the ability to drive innovation within their own enterprises [4]. SAP S/4HANA Cloud provides pharmaceutical organizations with the tools necessary for success in an industry that is continually growing. These tools include the provision of real-time insights, the strengthening of security, the optimization of supply chain management, and the promotion of innovation. SAP S/4HANA Cloud plays a big part in supporting Life Science firms in overcoming these problems and reaching their goals, and this is one of the aspects that makes it so important. The life science industry will continue to be significantly impacted by digital transformation, which will be accomplished through the utilization of SAP S/4HANA Cloud. It will be essential for pharmaceutical and medical enterprises to embrace digital transformation in order to maintain their competitive edge and fulfill the requirements of both patients and healthcare providers as new technologies emerge and regulatory demands mount. A simple upgrade to ERP software is not the only thing that is involved in the transformation to SAP S/4 HANA. Depending on the implementation goals that are being pursued by the Health Care industry (Biotechnology, Biomedical, Pharmaceutical, and Medical devices), the organization may be able to gain revolutionary benefits such as process excellence, business resilience, holistic innovation, data harmonization, and linked experiences. These benefits could be gained by the organization. Data is not the only thing that the SAP Business One schema does; it also makes use of triggers and views, particularly for the purposes of reporting and upgrading. In order to meet the ever-increasing demand for business intelligence (BI) among customers, SAP Business One was upgraded with the SAP High-Performance Analytical Appliance (HANA) technology update. SAP HANA technology stores data in main memory, as opposed to database management systems that use a disk storage mechanism. This results in a performance that is both more predictable and faster than that of the storage mechanism used by the latter [5-9]. The SAP Business One version for SAP HANA provides support for SAP HANA tenant databases, which serve as the basis for multitenancy in SAP HANA. This support was introduced with release 10.0 PL00 of SAP Business One edition. It is possible for a tenant database system to contain many tenant databases in addition to the individual system database. In addition to providing configuration and monitoring across the entire system, the system database stores information on the landscape of the entire system. When it comes to the management of application data and users, the tenant databases are, by default, separated from one another. Every single tenant database has the capability of being backed up and recovered irrespective of the other databases. It is essential for all of the tenant databases to use the same version of SAP HANA [10-16]. This is due to the fact that each tenant database is a component of the same SAP HANA database management system. Note 2096000 from SAP can be consulted for additional information regarding SAP HANA tenant databases. As shown in the following figure 1, which offers a summary of the architecture, the architecture of SAP Business One, version for SAP HANA, is presented as follows:

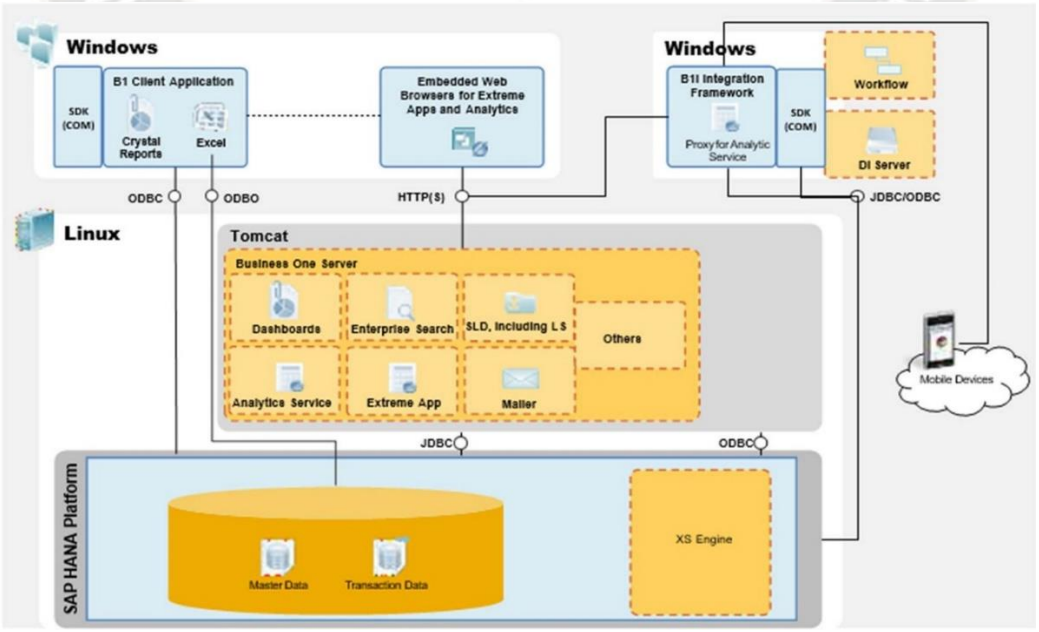

Fig 1: The SAP Business One version that is compatible with the SAP HANA architecture

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1.1 Application Components Overview

The software components of SAP Business One, as well as the version of SAP HANA, are discussed in this part, along with an explanation of how the business processes of SAP Business One make use of these components [17-19].

1.2 Server Components

Figure 2 provides a visual representation of the server architecture of SAP Business One, which is the version that is compatible with SAP HANA.

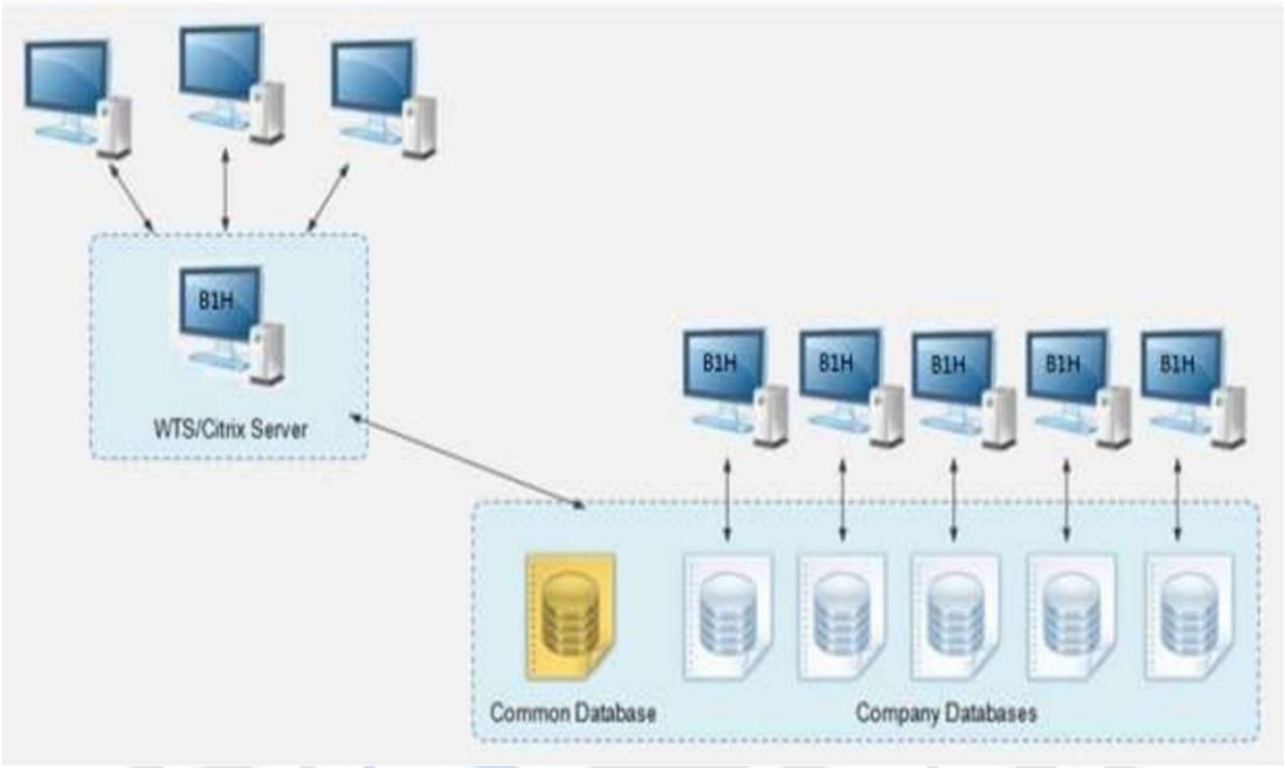

Fig 2: The version of SAP Business One Server Architecture that is compatible with SAP HANA

The installation of certain server components is required since they are necessary for the system landscape, however the installation of the remaining components is voluntary and can be done if there is a requirement for the company [20-24]. In a manner that is analogous, Windows serves as the foundation for the majority of the server components, while Linux is used for creating certain of them.

2. INSIGHTS ON DIGITAL TRANSFORMATION AND SAP S/4HANA

The first physical products, such as music and photographs, were transformed to digital format in the late nineties, which marked the beginning of the digitalization process. Recent technological advancements, such as the high-speed internet and mobile technology, had a significant role in the progress of these businesses. The "hockey stick" of digitization has arrived, and it is now affecting every single person and every single organization. In order to rethink their business models in light of the digital environment, companies that had previously adopted a more conventional approach to their strategy are now hiring chief digital officers. There is a significant amount of pressure being put on "analogue" company models to undergo significant transformation.

With SAP S/4HANA, we are able to provide our customers with a solution to the digital transformation. In its role as the digital core, it makes it possible to integrate digital practices that are developing around the core in a modular fashion, while simultaneously redesigning back- and mid-office procedures in order to accommodate the new context. The quality of the proven business concept is preserved, maximum automation and scalability is accomplished, the consumption model is substantially simplified, and totally new areas and sources of value are developed thanks to the digitalization approach. This is true for all digitalization techniques.

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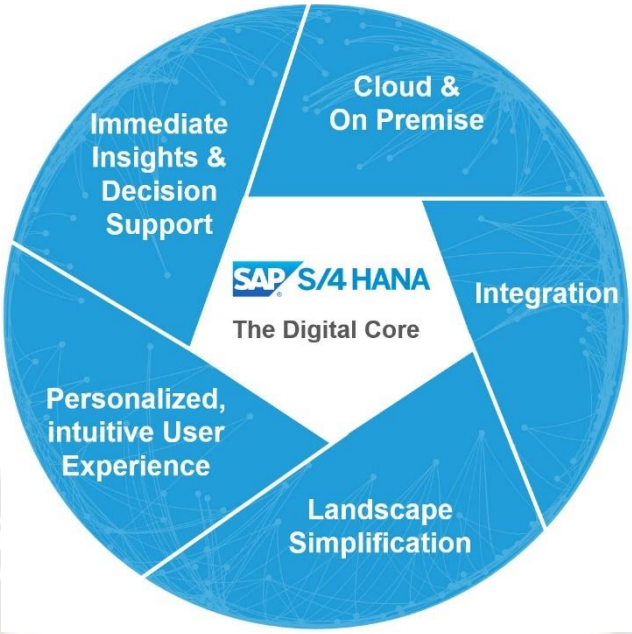

Fig 3: SAP S/4 HANA The digital Core.

Whether it was on the show floor, in keynotes, or in one-on-one meetings with customers and analysts, SAP S/4HANA was the topic of conversation at SAPPHIRE NOW this year. During the strategic address that I gave, I brought attention to the fact that the number of transactions will increase tremendously as a result of digitization, while at the same time the value of these transactions will decrease. This presents a challenge to the existing information technology landscapes, which is one of the outcomes of digital transformation. In my presentation, I provided a summary of the ways in which businesses or organizations might overcome these problems.

3. DIGITAL TRANSFORMATION: THE SAP HANA, SAP S/4HANA AND "BUSINESS NETWORKS" STRATEGY

This blog series, which has been going on for four weeks, has defined digital transformation, talked about the many possibilities it gives your business, and explained how to think about new business models. Most likely, you're reading this because you have some kind of relationship with the SAP community. The odds are in your favor. In light of this, it would be irresponsible of us not to explore the ways in which SAP's most recent solutions and acquisitions can assist you in putting your Digital Transformation objectives into action. People in ASUG and DSAG have already had a lot of conversations about how and when these products will fit into our members' business and technology environments. That's why we want to be as objective as possible when choosing between SAP S/4HANA and SAP HANA. To refresh your memory, our fundamental premise is that in order for an organization to be considered "digitally capable," it must possess a robust technological core, and that core is the enterprise resource planning (ERP) system. To build a strong core, the enterprise resource planning (ERP) system needs to be open, which means it should be easy to get data into and out of it. It also needs to be quick, responsive, and flexible. Take into consideration the components that are necessary for the human central nervous system. Each and every one of these needs is necessary for the ERP.
In light of this, we conclude that there are three primary reasons to take into consideration the future generation of ERP:

On account of the digitalization of everything that surrounds us, the number of data is rising at an exponential rate (according to McKinsey's Global Institute, the volume of data is growing at a rate of forty percent each year). Consequently, in order to process data quantities that are expanding at an exponential rate, a contemporary corporate software environment is an absolute must. In order to keep up with the competition, a platform that is extremely quick is essential. In the end, the challenge is not in gathering the data; rather, it is in transforming it into valuable business information as rapidly as possible, which drives decisions and action by providing the necessary knowledge. Collecting data from the equipment your customers buy is a good idea, but it would be much better to use that data to schedule service calls in case the equipment starts to act in ways that aren't generally expected.

- In order for your company to properly comprehend how it is integrated into the larger ecosystem, it is necessary for

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it to connect an increasing number of dots. In order to connect these dots, a company must have a back office and front office that are both robust and standardized. This back office and front office should be able to serve as the central clearinghouse for more data volumes and insights. In this regard, we believe that these new SAP systems could have a great deal of promise.

- Digital natives will want, if not expect, a workplace software environment that is easy to use for all tasks, from entering data to analyzing it to running the business. This is because they will be entering the workforce for the first time for the first time. We have been advocating for the implementation of SAP Fiori as a crucial technology that every member company ought to be deploying. The new SAP Fiori user interface is what makes SAP S/4HANA and SAP HANA easy to use.

Both SAP HANA and SAP S/4HANA have recently undergone innovations and use cases that are beginning to shed light on the path that lies prior to them. A significant number of members of our user community have utilized these solutions for the completion of significant projects, and they have reported having favorable experiences. In spite of the fact that there is still a great deal of work to be done, the established influence programs that we have with SAP are extremely important in order to include the requirements of our membership into the upcoming product releases. Over the course of the previous two years, ASUG and DSAG have conducted a poll of the membership regarding the use of SAP HANA. In conclusion, the findings have demonstrated that the question for members of ASUG and DSAG is not whether they will adopt, but rather when they will adopt, despite the fact that there are ongoing worries over licensing, cost reductions, and migration roadmaps. The development of a business case for the SAP HANA platform, which is now known as SAP S/4HANA, has been and will continue to be of the utmost significance, according to the comments that we have received from those who have responded to our survey. Despite the fact that digital transformation is becoming an increasingly important topic on the agendas of senior leadership, there should be more conversation about the topic and where SAP's platform fits into future plans. This is despite the fact that it is highly unlikely that this will alter in the near future.

It is noteworthy to note that the ASUG SAP HANA Adoption survey that was carried out in 2015 discovered that SAP S/4HANA has had a transient boost in popularity among members (due to the fact that it was introduced earlier in the year): Some of the things that respondents were excited about with SAP S/4HANA were real-time analytics, a simplified IT structure and smaller footprint, increased speed, and a new user experience (UX) called SAP Fiori®. All of these things were features that were previously unavailable. Additional work has to be done by ASUG, DSAG, and SAP in the area of the roadmap for "how" member organizations integrate these new technologies and capitalize on the best practices and lessons gained from the community. This work is necessary because there is a need for "how" member organizations integrate these new technologies.

It is recommended that members who acknowledge the reality of digital transformation give some thought to making an investment in the most recent technologies offered by SAP. It is required to undertake a comprehensive and methodical examination of SAP HANA and SAP S/4HANA, in addition to SAP SuccessFactors, SAP Ariba, Concur, SAP Fieldglass, SAP Hybris, and SAP Cloud for Your Customers. This is necessary in order to achieve the goal that has been set. When it comes to digital transformation, it is essential for businesses who have a forward-thinking mindset to accept that SAP HANA and SAP S/4HANA are still in the process of being developed and do not offer a solution that can solve all of the issues that are related with it. However, the advantages that come with getting a head start significantly exceed the advantages that come with getting a late start.

4. ERP MODEL ROLE IN THE DIGITAL TRANSFORMATION STRATEGY OF ENTERPRISES

The importance of the enterprise resource planning (ERP) system in the core systems of organizations cannot be denied. This is because it is essential to comprehensively update and link the financial situation of the business to all stages, beginning with sales and ending with the collection of receivables, moving on to purchases and payments, and ending with production, delivery, and maintenance. The incorporation of an enterprise resource planning (ERP) solution into the digital transformation strategy is without a doubt one of the most important jobs that needs to be finished.

In the case of companies that have not yet implemented ERP or that have already deployed ERP, the question that has to be answered is: How should this be accomplished? It is essential to clearly describe the main systems that will be implemented in accordance with the company's short-term and medium-term strategy in order to build a strategy on the IT platform roadmap for businesses that have not yet implemented the ERP system. This is necessary in order to establish a strategy for implementation of the ERP system. In addition, businesses are required to identify realistic priorities with regard to the budget and the amount of time needed for implementation.

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Professional consulting units should be employed to systematically design the roadmap if businesses are lacking in confidence and require a methodology. In the opposite direction, the principal software system of the organization will be intricately integrated with the enterprise resource planning system and the data management platform at the lower layer. As a consequence of this, it is of the utmost importance for businesses to develop a specific business model in order to identify the value chains and, consequently, to determine the needs that are necessary for the ERP system to operate well.

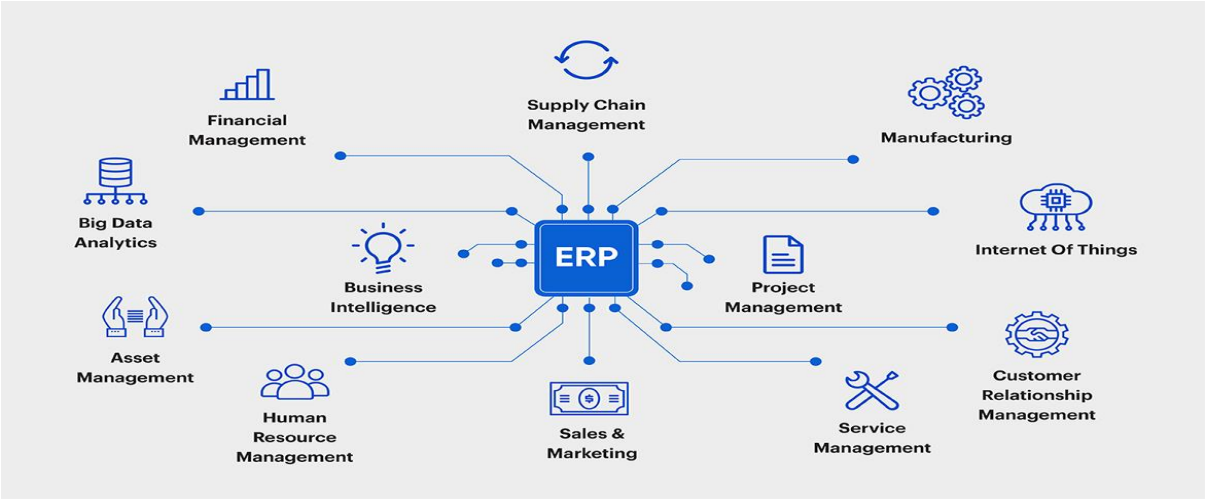

Figure 4: ERP model in enterprise

It is vital to reevaluate the following elements for businesses that have implemented ERP: the age of the technology, the ease of application, the operation and exploitation behaviors, and the ability to interact with other systems. Figure 7.4 illustrates this. A clear indication of the internal constraints of the ERP system should be included in the evaluation report. In line with the enterprise's medium-term goal, the study should also pinpoint the procedures that differ between the current system and the new future value chain. When assessing the present state of affairs and finding areas for system improvement and upgrade, it is important to take into account aspects such as remote system operation, the construction of automated data entry robots, integration with online business and administration support systems (e.g., e-contracts, e-invoices, etc.), electronic, digital signature, electronic approval, etc., as well as business and communication platforms across various channels (e.g., e-commerce, social networking, transportation applications, etc.).

CONCLUSION

The objective of this study is to report on the most prominent data analytics and optimization approaches that are used to address supply chain management in the retailing business. This report will be based on the findings of a systematic literature review that we completed in the context of A-SCM before beginning this study. Earlier than that, an exploratory search was carried out in this region with the purpose of locating reliable external data sources. It would appear, on the basis of our findings, that the majority of the research that has been conducted on the topic of supply chain management (SCM) has mostly concentrated on internal data sources, while cloud computing technologies and external data sources have been avoided for the most part. The term "digital transformation" refers to the process of incorporating cutting-edge digital technologies into every aspect of a company in order to enhance both the customer experience and the basic operations of the company. It's about coming up with innovative approaches to generating revenue and improving the overall efficiency of the firm. There are numerous approaches that manufacturing organizations can take in order to implement digital transformation. As an illustration, in order to improve the quality of the client experience, they might implement technology such as cloud computing, artificial intelligence, machine learning, or other robotic technologies. It necessitates a departure from conventional ways of thinking and paves the way for methodological approaches that are collaborative and exploratory.

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