# Digital Leadership: Exploring the Role of Top Management in Digital Transformation

**Dr. Utkarsh Anand[1*], Dr. Vivek Shrivastava[2]**

[1*]*Associate Professor, Department of Management, Kalinga University, Raipur, India.*

*E-mail: ku.utkarshanand@kalingauniversity.ac.in*

[2]*Assistant Professor, Department of Management, Kalinga University, Raipur, India.*

*E-mail: ku.vivekshrivastava@kalingauniversity.ac.in*

***Received: 02 March 2024; Revised: 04 April 2024; Accepted: 03 May 2024; Published: 28 June 2024***

**Abstract**

Digital Transformation (DT) generates new goods, services, and business models that alter organisational operations and add value. DT streamlines regular operations and processes. Tasks are streamlined, productivity is increased, and time and money are saved. It generates and seizes value. Business models are altered by new data-driven models that include new technology and optimise internal processes. Organisational workforces are the foundation of digital transformation, and their culture helps them to develop and change. Microsoft's culture is characterised by a growth attitude, curiosity about the demands of customers, and a desire to discover new ways to enhance their experiences. When compared to older solutions, the business analytics systems driven by machine learning nowadays provide better data visibility. Growing amounts of data have enabled start-ups to create superior, personalised analytics. As a result, big businesses began buying up fresh startups. Due to competition from both large organisations and small and medium-sized businesses, the business analytics industry is highly fragmented. The term "business analytics" describes the methods and abilities used to examine historical company performance in order to obtain knowledge and inform future strategy. Digital leaders in SMEs must research successful DT instances and attempt to apply what they learn to their own company.

**Keywords:** Digital Transformation; Management; Business Analytics.

## I. INTRODUCTION

In order to improve society and industry, the World Economic Forum launched the Digital Transformation (DT) program in 2015. Technology development has begun to alter organisational procedures and every industry. Industry change has been slow to take hold due to entrenched beliefs. However, opportunities to learn new things, reconsider procedures, and enhance our working methods are always presented by change (Mihardjo & Sasmoko, 2019). Adopting digital technologies by a business is known as digital transformation. Its application is frequently motivated by the desire to increase value, creativity, or efficiency. The first industrial revolution made it easier for enterprises and society to use steam power to mechanise output. Electricity facilitated the second industrial revolution and introduced mass production to the industrial sector. The development of computers sparked the third revolution. Information technology and

electronics were used by industries to automate production. These days, a lot of individuals have mobile devices connected to them, and the number of machines and gadgets connected to the Internet of Things (IoT) is growing. The fourth industrial revolution holds promise for raising living standards and income levels worldwide. New goods and services that improve client experiences are now possible thanks to technology. Future technology advancements will increase the organization's long-term productivity and efficiency. In order to improve safety in industries, it will be possible to replace workers with machines (Albannai et al., 2024). The most important component for production will be talent. The labour market will shift from low skill/poor pay to high skill/high pay. In every industry, innovations and the disruption of business models will pick up speed. Many businesses are seeing how new technologies upend established industrial value chains and open up new avenues for consumer service and satisfaction. Due to the shift in consumer behaviour brought about by digital technology, businesses now need to disrupt their industry in order to remain agile in their service and product development. Platforms for technology are transforming how people consume goods and services. In the economy, these digital platforms are generating new services. Executives in business must comprehend the changing digital landscape. They must constantly develop and explain digital transformation to their operating teams. Big businesses began embracing digital transformation to seize opportunities, but this is putting more pressure on them to change. Small and Medium-Sized Businesses (SMEs) are constrained in their ability to manage their current operations while transforming for future success. Organisations must begin acting and thinking like digital businesses. It's not the same as acquiring and implementing a single solution. There is more to it than a single easy software fix. It's actually you who is considering your own prospects as a digital business (Mwita & Joanthan, 2019). Figure 1 displays the features of Digital Transformations.

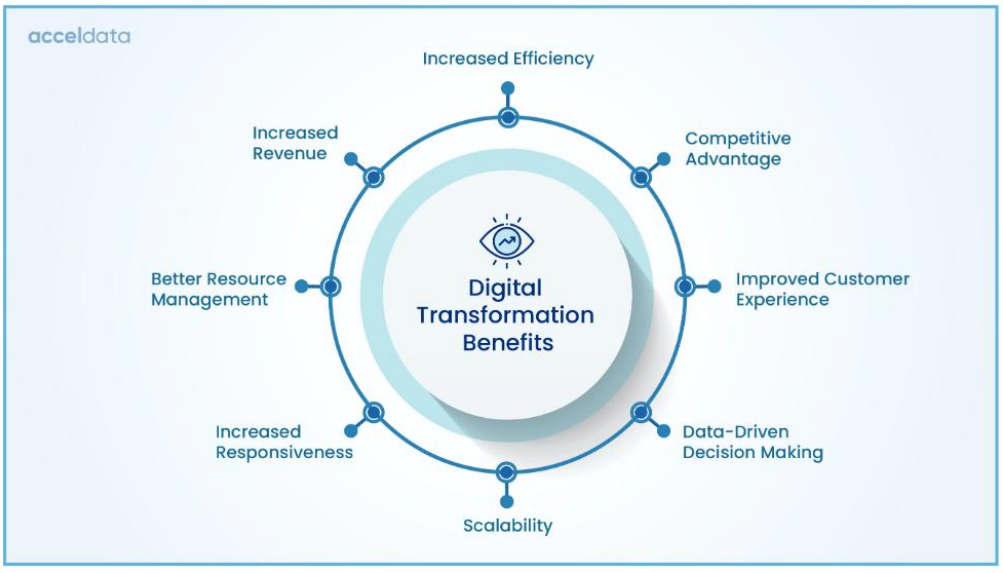



Figure 1: Features of DT

In this case, the introduction is examined in section 1 of the article while the pertinent literature is examined in section 2. Section 3 and 4 explains the goal of the work, Section 5 shows the business analytics of the work, and Section 6 concludes the project.

## II. LITERATURE REVIEW

Because of technology advancements, the manufacturing and service sectors of the Indian economy are all changing. SMEs discovered that, as a result of technology and information, customers had different expectations for their goods and services. Due to a lack of knowledge and expertise in digital transformation, small and medium-sized enterprises are falling behind in this regard. Businesses must rethink their operations using cloud computing, social media, data analytics, and the Internet of Things, as well as altering their business models. Using modern technologies, digital transformation is a method of rebuilding company models based on consumer needs (Borowska, 2019). It will help SMEs stay competitive in this ever-evolving market. SMEs admit that they can now compete in the market with larger, more established businesses thanks to digital transformation. The necessity for SMEs to adapt to the digital transformation has been brought to light by advancements in internet connectivity and communications (McCarthy et al., 2022).

Depending on the type of organisation, transformation efforts, level of commitment, and other variables, the advantages of a digital transformation will differ. In their companies today, 21% of executives see notable benefits from digital transformation. These executives believe that developing a competitive position requires a major contribution from digital transformation (Fernandez-Vidal et al., 2022).

### *2.1. Digital Transformation in Manufacturing & Service industries*

The Journal of Information Systems Strategy. This article examined the process of digital transformation, which involves managing the structural changes that impact both the positive and negative consequences of the process while digital technologies cause disruptions that prompt strategic responses from organisations seeking to shift their paths of value generation. Ines Mergela, Noella Edelmannb, and Nathalie Haug (2019) defined digital transformation through expert interviews for an Elsevier publication, Government information quarterly. In 2021, Yasser Omar and Essam Shehab An overview of the DT concept in the manufacturing sector is given in this study. The definition of digital transformation and the evolution of its notion in the manufacturing sector are presented in this study. There are many obstacles in the way of the industrial sector's adoption of the digital transformation process. The advantages of digital transformation implementation in the manufacturing sector.

2016's Auriga. Trends in the History, Present, and Future of the Digital Transformation The successful digitalisation of your business model is guided by the springer book Digital Transformation Now. provides a clear road map for firms looking to quickly go digital. describes effective real-world digital business model best practices and gives a summary of innovation tools and activities. According to Berghaus, S. & Back, A. (2016), Conference on Information Systems, this study uses empirical data to determine typical steps of a process for digital business transformation. The Digital Maturity Model (DMM) offers a deeper comprehension of the important stages for overseeing digital transformation. Research reveals how digital business transformation initiatives are now prioritised and approached.

Jim Hageman Snabe and Cheryl Martin (2017) The World Economic Forum's Digital Transformation Initiative, which aims to unlock $100 trillion for business and society, was

discussed during this conference. The Fourth Industrial Revolution and the value created by digital transformation were the focal points of the forum discussions. Businesses and legislators must work together on innovative projects to fully realise the promise of B2B platforms to benefit both business and society in a world driven by platforms. Agile manufacturing is the new paradigm, according to Zhang Z. Sharifi H. in the International Journal of Operations & Production Management (2000). Some of the key ideas of agile manufacturing include recognising and adapting to change, as well as strategically utilising managerial and production techniques and resources to take advantage of it. This essay explores these ideas and offers a framework to help manufacturing firms become more agile.

In the 1999 issue of International Journal of Production Economics, Yusuf Y.Y., Sarhadi M., and Gunasekaran A. discussed "Agile manufacturing: The drivers, concepts, and attributes." This essay examines agility's definition from several angles. The paper lists possible future study paths and outlines some of the major factors that promote agility. The 2016 World Economic Forum report on digital enterprise examined digital talent and skills, digital models, and a reexamination of conventional success measurement techniques. Journal of Emerging Technologies and Innovative Research, Geevarathna and Shyam (2018). Trends and obstacles associated with digital transformation in the hospitality and tourism sectors. The impact of technology on digital transformation with an emphasis on hospitality and tourism will be examined in this paper.

Jane Wrigh and Steve Schlarman, "Digital Risk Report," 2019. This paper discussed the benefits of technology as well as potential hazards, including those related to data privacy, workforce safety, digital privacy laws, cyber dangers, and company resilience. International Business Information Management Association, Viktoria T. and Irina U. (2020). This article addresses risk management in the digital transformation, specifically focussing on the creation of novel risk assessment techniques and their effects on business procedures in the establishment and growth of the digital economy.

## III. PROPOSED FRAMEWORK

This study centres on new digital transformation technologies used to Thane Belapur Industries SMEs using analytics. It gives supervisors, digital leaders, and managers of SMEs insight into the concept of digital transformation. The business impact of digital transformation is the intended field of study. Analytics is used to optimise change and make data-driven decisions. It discusses the advantages of digital transformation for SMEs as well as its obstacles. Research hypotheses are tested using empirical data that is gathered and examined (Klein, 2020). In India, SMEs are important because they industrialise rural areas and provide jobs. They function as huge industries' subsidiary units. Many SMEs are unaware of the advantages of the digital transition. They don't know much about emerging technology and are resistant to change. The Indian government has launched digital India to connect SMEs to the internet. SMEs are unaware that the cost of digital transformation has decreased due to increased competition among technology businesses shows in Figure 2.

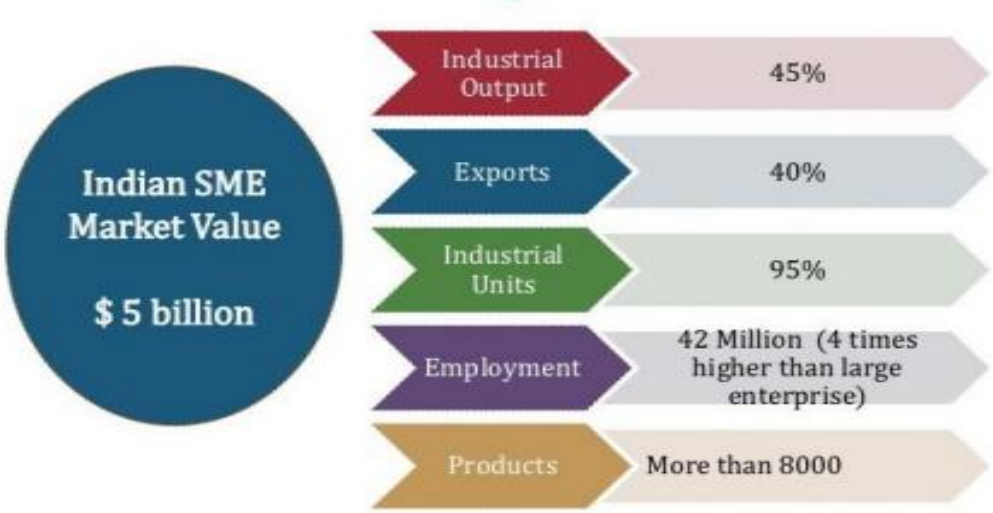



Figure 2: Indian SME Market Value

Manufacturing SMEs have observed that there is a shift in consumer expectations and a need for information regarding product availability (Kokot et al., 2021). Managers realised they had to use analytics and data to inform their decisions. SMEs can track targeted KPIs in real time with the use of analytics tools. Analytics helps SMEs make better business decisions, reach their objectives using the right tactics, and set themselves up for expansion (Türk, 2023). According to the survey, 50% of industries use predictive analytics. SMEs use diagnostic analytics at a rate of 26%. In SMEs, descriptive analytics is used by 21%. Just 3 percent of SMEs use prescriptive analytics (Magesa & Jonathan, 2022) shows in Figure 3.

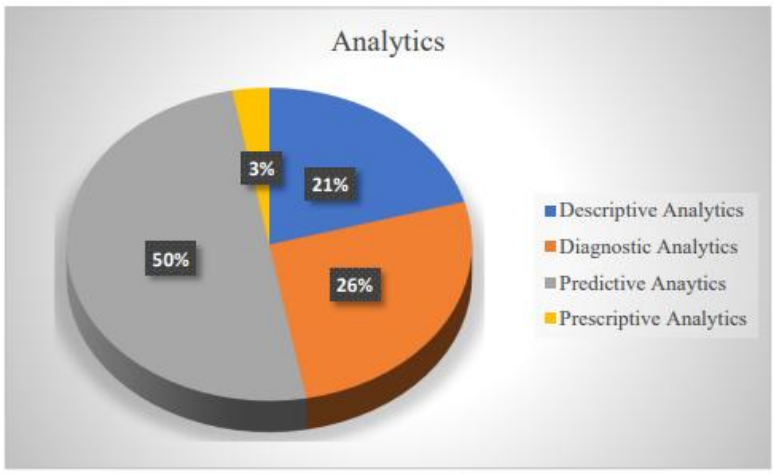



Figure 3: Analytics in Survey

Small and medium-sized businesses (SMEs) play a significant role in the commercial ecosystem of nations like India (Engesmo & Panteli, 2021). They help the bigger businesses run smoothly and contribute to the economy by creating jobs. The two main obstacles to SMEs' digital transformation are e-business value analysis and infrastructure (López-Muñoz & Escribá-Esteve, 2022). Stockdale and standing noted that obstacles include a lack of funding, a shortage of technical experts, and internal impediments displays in Figure 4.

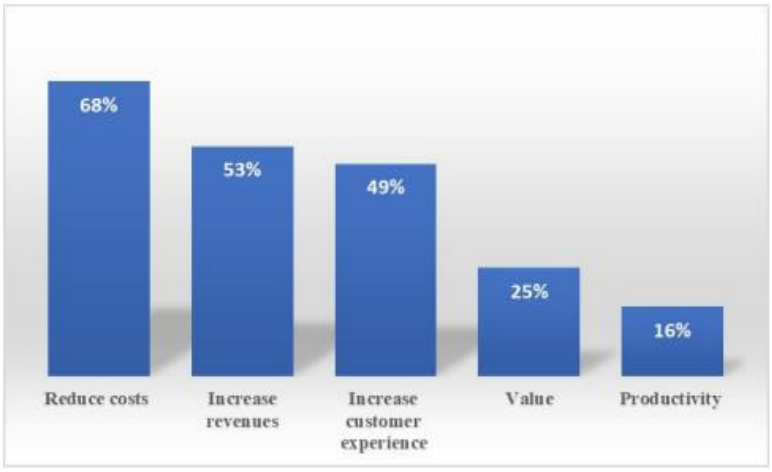



Figure 4: Opportunities of Digital Transformation in SMEs

Among the major issues facing SMEs is the shortage of competent workers and a poor strategic plan. Taking risks, the act of managing knowledge, the unpredictability of the future, and innovations are obstacles. Insufficient backing from upper management, rivalry, and unpredictability around digital change (Mihardjo & Sasmoko, 2019). The World Economic Forum said that obstacles to digital transformation include a lack of expertise, training, and research at academic institutions, as well as an increase in the demand for customer-focused services (Yusuf et al., 2023) in Figure 5. SMEs in business operations are not receptive to new information systems, new business models, innovative cultures, or the frequent modification of rules (Asia Pacific Economic Cooperation, 2020). The successful execution of digital transformation also depends on data collecting and analytics (Albannai et al., 2024).

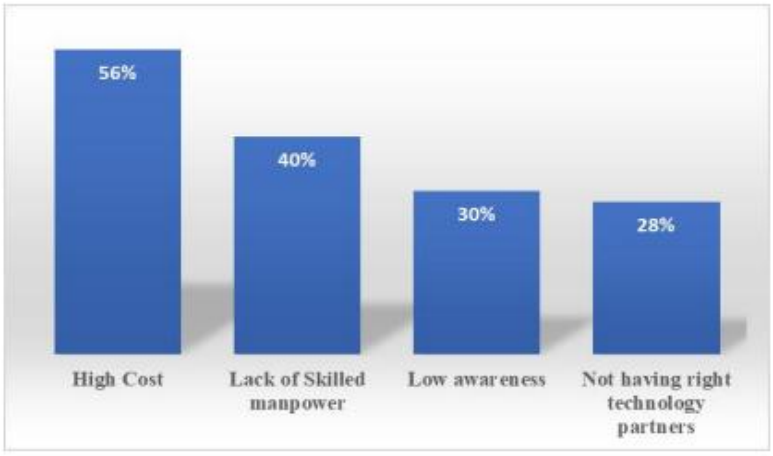



Figure 5: Challenges of Digital Transformation in SMEs

SMEs are open to change in spite of the aforementioned difficulties. To aid in the digitisation of SMEs, the Indian government has started the Digital India initiative. For agility, growth, and competitiveness, support SMBs with Software as a Service (SaaS) business applications and intuitive interfaces. A manager's involvement in the decision-making process is crucial in SMEs (Mwita & Joanthan, 2019).

## IV. DISCUSSION BUSINESS ANALYTICS USAGE

In every area of business, BA is a field that is expanding. Some corporations have used this idea as the foundation for their business models and have constructed their operations around their capacity to gather, evaluate, and act upon data (Fernandez-Vidal et al., 2022). "A broad category of applications, technologies, and processes for gathering, storing, accessing, and analysing data to help business users to make better decisions" is how business analytics (BA) is commonly defined.”.

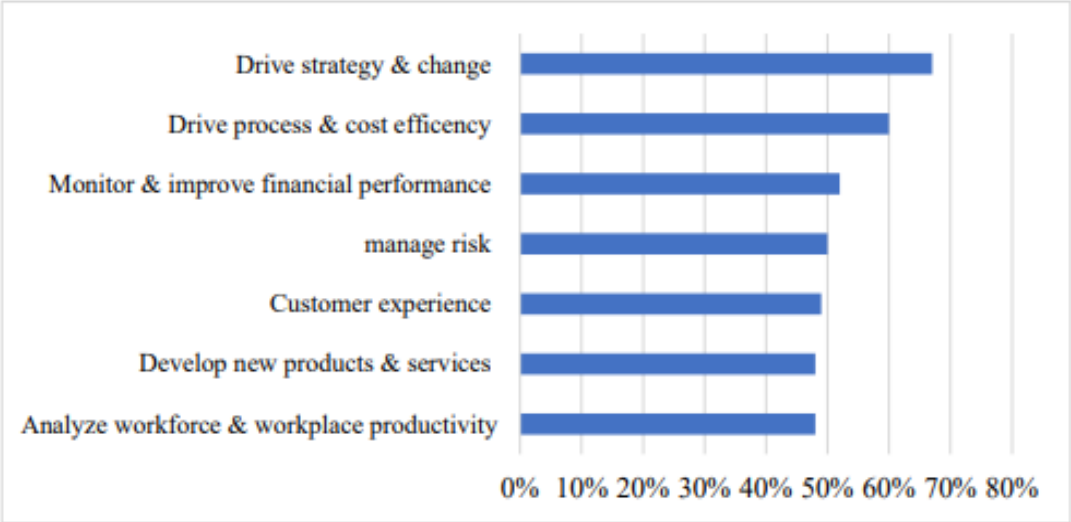



Figure 6: Use of Analytics

Conventional database systems lack the capacity to analyse large amounts of data and make the decisions that businesses need to make (Klein, 2020). Currently, BA is the method of analysing large amounts of data by utilising databases, interfaces, sophisticated statistical and mathematical models, and "what has happened" and "what will happen" queries Figure 6. Prominent corporations such as Accenture, IBM, and Deloitte Consulting have established analytics centres and practices. The rate at which structured and unstructured data is growing is driving the expansion of the BA field. Business analytics is one of the top two IT priorities for large organisations, per an International Data Corporation (IDC) report (SAS-b, 2011) (Kokot et al., 2021). "The United States faced a shortage of managers and analysts with the deep analytical skills necessary to use big data analysis to make smart decisions." Analytical knowledge of business information, insight, inventiveness, and common sense are the fundamental components of analytical thinking. Business issues are invariably unique and connected to the workplace, such as when managers lack the time or drive to focus on finding analytical solutions or pay enough attention to the quality of the data they get as input. The market is seeing an increase in the capabilities of analytical services.




Figure 7: SAP Enterprise Data Management

Subfields including continuous intelligence, immersive analytics, and analytics catalogue are improving existing methods and opening up new avenues for business analytics. The application of statistical models to issues and the production of useful insights from pre-existing data is known as analytics. Several writers have looked into the elements, uses, and techniques of BA. They ascertained the constituents of business analytics and their respective values to an establishment. The authors state that decision assistance is the main goal of business analytics Figure 7.

According to Laursen, G., BA is the appropriate decision support given to the appropriate individuals and digital processes at the appropriate moment. Business intelligence (BI) is a subset of business analytics. Business analytics is applied in numerous corporate management domains, catering to various stakeholders and utilising a variety of functionalities. The organization's size, industry, ownership, and level of competition all have an effect on how effective business analytics are. The management style and corporate culture have an impact on how applicable business analytics can be. The rise in customer experience is not correlated with innovations, agility, or technology. Managers of SMEs must create an effective digital strategy to enhance the client experience. Initiatives for digital transformation begin with the problems faced by SMEs, and by using creativity, technology, and agility well, customer experience may be enhanced. Experience of the customer is a crucial factor in digital transformation (Türk, 2023).

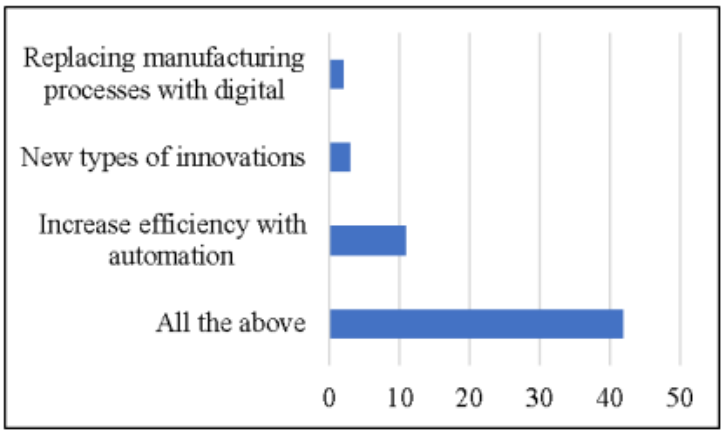



Figure 8: Understanding of Digital Transformation

The majority of respondents agreed that digital transformation entailed replacing conventional procedures with digital technology, requiring innovations and automation to increase organisational efficiency in Figure 8.

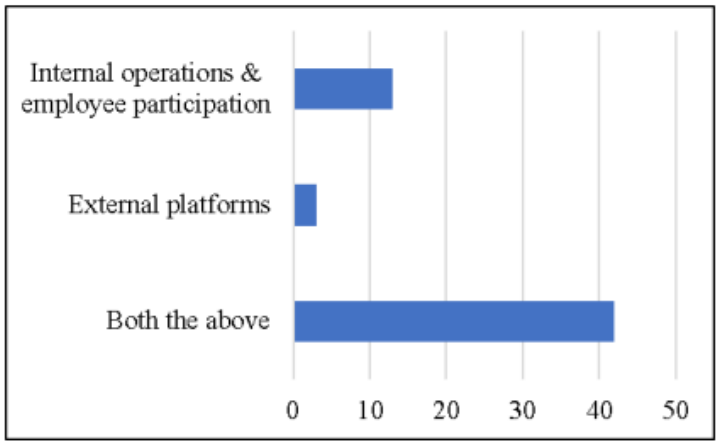



Figure 9: Digital Transformation Focus

Companies need to focus on customer journeys and find patterns in how their goods and services are delivered to consumers Figure 9. In order to achieve their business goals, organisations wish to track the success of their digital transformation projects. A process, activity, or system's performance can be measured using key performance indicators, or KPIs. The researcher has chosen key performance indicators (KPIs) that include customer experience, organisational awareness, technology, automation, agility, innovations, new goods and services, and business models. Correlation tests have been used by researchers to test shows in Table 1.

Table 1: Inter-correlations among Various Areas of Scales (N = 100)

| Area | Experience | Automation | Innovation | Individuality | New business model | Agility | Full scale | Total |
|---|---|---|---|---|---|---|---|---|
| **Experience** | 1.000 | .689** | .495** | .295** | .721** | .695** | .608** | .250* |
| **Automation** | | 1.000 | .375** | .044 | .580** | .649** | .633** | .288** |
| **Individuality** | | | 1.000 | .263** | .494** | .491** | .462** | .196 |
| **New business model** | | | | 1.000 | .244* | .288** | .132 | .166 |
| **Agility** | | | | | 1.000 | .730** | .596** | .156 |
| **Full scale** | | | | | | 1.000 | .721** | .158 |
| **Total** | | | | | | | 1.00 | .306** |

It is imperative for organisations to prioritise internal operations, employee engagement, and external platforms. Platforms for consolidated data are useful for SMEs. Data lakes and cloud computing provide data storage, while networking services provide flexibility. The Internet of Things (IoT) facilitates customer connectivity and understanding. Platforms for e-commerce provide positive consumer experiences. Analytics platforms enable company transformation by constructing insights into business processes. Organisations must create a digital transformation strategy and customer experience in the digital age.

Table 2: Mean and Standard Deviation Area-wise and for Full Scale (N=100)

| Area | Experience | Automation | Innovation | Individuality | New business model | Agility | Full scale |
|---|---|---|---|---|---|---|---|
| **Mean** | 19.49 | 8.43 | 11.97 | 10.07 | 8.05 | 35.84 | 106.09 |
| **S.D.** | 2.949 | 0.879 | 1.755 | 2.085 | 1.167 | 4.211 | 11.217 |

Table 2, the findings indicate a positive correlation between customer experience and an organization's awareness of digital transformation. a balanced relationship between automation and technology, as well as flexibility for ongoing development.

## V. CONCLUSION

According to a Morder intelligence analysis, the business analytics market was estimated to be worth USD 67.92 billion in 2020 and is projected to grow 1.5 times by 2026. According to global research and advisory firm Gartner, businesses will begin to implement augmented analytics, which enables the use of machine learning and natural language processing to automate analysis procedures. 2018 saw the development of smart data discovery and enhanced platforms for businesses to gain insights into the volume of data. The field of business analytics has seen an evolution in visualisation nowadays. Analytics is being used by most businesses to inform strategic decision-making. Businesses are beginning to use business analytics to monitor performance in manufacturing and services, as well as supply chain and inventory management.

## REFERENCES

[1] Mihardjo, L. W. W., & Sasmoko, S. (2019). Digital transformation: Digital leadership role in developing business model innovation mediated by co-creation strategy for telecommunication incumbent firms. In *Strategy and behaviors in the digital economy*. Intech Open. https://doi.org/10.5772/intechopen.82517

[2] Albannai, N. A., Raziq, M. M., Malik, M., Scott-Kennel, J., & Igoe, J. (2024). Unraveling the role of digital leadership in developing digital dynamic capabilities for the digital transformation of firms. *Benchmarking: An International Journal*. https://doi.org/10.1108/BIJ-10-2023-0756

[3] Mwita, M. M., & Joanthan, J. (2019). Digital leadership for digital transformation. *Electronic Scientific Journal*, *10*(4), 2082-2677.

[4] Borowska, G. (2019). Digital leadership for digital transformation. *Współczesna Gospodarka*, *10*(3), 11-19.

[5] McCarthy, P., Sammon, D., & Alhassan, I. (2022). Digital transformation leadership characteristics: A literature analysis. *Journal of Decision Systems*, *32*(1), 79-109. https://doi.org/10.1080/12460125.2021.1908934

[6] Fernandez-Vidal, J., Perotti, F. A., Gonzalez, R., & Gasco, J. (2022). Managing digital transformation: The view from the top. *Journal of Business Research*, *152*, 29-41. https://doi.org/10.1016/j.jbusres.2022.07.020

[7] Klein, M. (2020). Leadership characteristics in the era of digital transformation. *Business & Management Studies: An International Journal*, *8*(1), 883-902. https://doi.org/10.15295/bmij.v8i1.1441

[8] Kokot, K., Kokotec, I. Đ., & Čalopa, M. K. (2021, May). Impact of leadership on digital transformation. In *2021 IEEE Technology & Engineering Management Conference-Europe (TEMSCON-EUR)* (pp. 1-6). IEEE. https://doi.org/10.1109/TEMSCON-EUR52034.2021.9488620

[9] Türk, A. (2023). Digital leadership role in developing business strategy suitable for digital transformation. *Frontiers in psychology*, *13*, 1066180. https://doi.org/10.3389/fpsyg.2022.1066180

[10] Magesa, M. M., & Jonathan, J. (2022). Conceptualizing digital leadership characteristics for successful digital transformation: the case of Tanzania. *Information Technology for Development*, *28*(4), 777-796. https://doi.org/10.1080/02681102.2021.1991872

[11] Engesmo, J., & Panteli, N. (2021). Digital leaders and the transformation of the IT function. *Scandinavian Journal of Information Systems*, *33*(1), 4.

[12] López-Muñoz, J. F., & Escribá-Esteve, A. (2022). Executives' role in digital transformation. *International Journal of Information Systems and Project Management*, *10*(3), 84-103.

[13] Yusuf, M., Satia, H., Bernardianto, R., Nurhasanah, N., Irwani, I., & Setyoko, P. (2023). Exploring the role of digital leadership and digital transformation on the performance of the public sector organizations. *International Journal of Data and Network Science*, *7*(4), 1983-1990. http://dx.doi.org/10.5267/j.ijdns.2023.6.014