

Digitalization in India: Trends and Challenges

¹S. Christina Sheela, ²SPS. ArulDoss, ³S. Jenifer Infanta, ⁴US. Ilakkiya

¹Associate Professor, Gnanam School of Business, Thanjavur, Email ID: Christina.sheela@gsb.co.in

²CEO, Gnanam School of Business, Thanjavur, Email ID: aruldoss@gsb.co.in

³⁴I year MBA Student, Gnanam School of Business, Thanjavur

Abstract

On July first 2015, Republic of Indian prime minister inaugurated digital India week. Today, advances in technology bring changes to people's way, and difficult organization to accompany these advances. This paper argues with the digital technologies that are just about used and facilitate in developing business and industries. In additional business, technologies facilitate in rising the business strategy. In a corporation, to beat the challenges, the leader would recommend some resolution to the work force are developing digital human resource, digital technology and development, digital skills, building vision and strategic goals. The challenges that may be moon-faced within the field of education, exchange of data, crime and digital illiteracy. Within the field of digital technology, there happens lack of masterful man-power and day by day the quantity of workforces gets reduced thanks to technology development. The target of this paper is interpretation and discovering the perception of digital transformation. Digital transformation challenges are complicated to handle however the organization and also the individuals should shift towards the changes of development.

Keywords: Digital Transformation, Technologies, Trends and Challenges, Development Growth.

1. INTRODUCTION

Digitalization is that the use of digital technologies to vary a business model and supply new revenue and value-producing opportunities. during this medical aid, it change automation, increase knowledge quality, and collect and structure all that knowledge thus we are able to apply advances technology, like higher and smarter code [1]. In general, Digital Transformation is all concerning the method of victimization digital technology to form new – or modify existing – business processes, culture, and client experiences to fulfill dynamic business and market needs. medical aid in business helps to boost the potency of its operations, creating automation attainable. There square measure fewer human errors and operational prices square measure reduced, because of the shrunken want for human resources.

Digital strategy focuses on victimization technology to boost business performances, whether or not meaning making new merchandise or reimagining current processes. It specifies the direction a corporation can want produce new company's blessings with technology, additionally because the ways it'll use to realize these changes. currently a days digital transformation is that the necessary issue for a business. concerning half-hour of the corporate navigates a digital transformation with success. They greatly effective within the value and property in surroundings. Their return a number of the necessary factors for a business to fallow is that craft a transparent integrated strategy, attempt to leadership from the highest through the center, place the simplest person within the right place, adopt a number of the attitude that suits example agile, and eventually live your transformation progress.

During this paper, it shows concerning the property in geographic point through technologies to open communication and change collaboration between people, teams, and customers can result in additional mergers, acquisitions, and reorganizations of major vendor's portfolio. Organizations square measure forced to adapt to new ways in which of doing things, principally associated with the digital transformation the planet has been experiencing, from AI (Artificial intelligence) to blockchain and net of things (IoT). Digital transformation may be a method at an equivalent time combining digital technology in new ways in which or with physical parts that change social modification and make new values for users. Digital transformation is additionally emphasized in its ability to boost existing processes, and also the team business model that may modification below the impact of digital transformation.

The bigger the potency and satisfaction with leadership, the upper the digital leadership skills square measure additional democratic. Before the Covid-19 pandemic appeared and unfold, non-public organizations, additionally as organizations providing public services, developed a digital transformation strategy to develop organizations. awake to this, leaders of the many public and personal organizations, some countries, square measure creating serious investments by deciding to maneuver towards digital development. The ways that structure the achievements that a lot of countries have thus far might not have an equivalent impact within the future thanks to changes in international integration and digital technology development. The strategy utilized in the business is to use medical aid with technology so as to sustain within the digital economy and have a gradual growth. To implement this paper, it talks concerning the medical aid structure during this epoch with AN analytic structure. Digital transformation says concerning the context of the mapping by the challenges and chance that the business or organization may face with some suggestion to the leader to handle the digital transformation.

2. DIGITAL TRANSFORMATION

2.1 Basic Concepts:

Digital transformation is the adoption of digital technologies that help introduce some best version of business models or change how existing businesses operates. In the digital transformation there are 3 steps to be done successfully in order to complete the digitalization process. First is Digitalization, second is Optimization and final step is Transformation. Digital Transformation is based on the most important 4 factors as shown in the fig-1:

- Customer
- Technology
- Strategy
- Business

Customer are the main element for a business which use of technology. Technology is the important component for all the field [4]. Technology are the important media for the digitalization process. In a business they always have the strategy for their development. In general, a business or a company or an industry or an organization they must have upgraded technology, plans to attract the customer.

There are four main area of digital transformation are:

- Process Transformation
- Business Model Transformation
- Domain Transformation
- Cultural/Organizational Transformation.

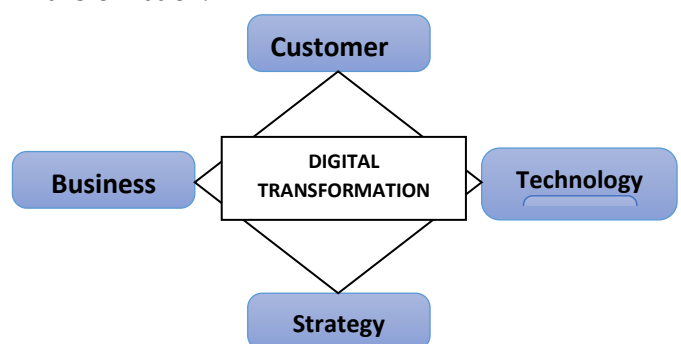


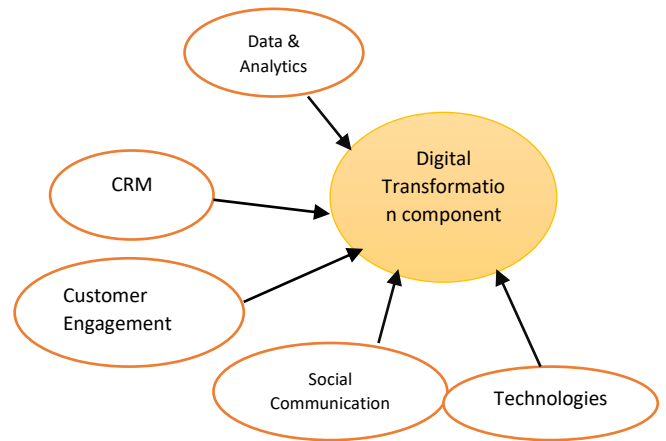
Fig – 1: CONCEPT

There would like of digital strategy for a company so as to become a developing company. A digital strategy, generally known as a digital media strategy, could be arrange for maximizing the business edges of knowledge assets and technology-focused initiatives. A sure-fire digital strategy needs a cross-functional team with government leadership, selling and knowledge technology (IT) members. Digital transformation is that the integration of digital technology into all areas of a business, essentially dynamical however you use and deliver price to customers. it is also a cultural amendment that needs organizations to repeatedly challenge the established order, experiment, and obtain snug with failure.

2.2 Digital Transformation Component:

2.2.1 The digitalization component is the main function for the upcoming future. As in Figure 1.1, They are the important function of a business. Customer engagement and CRM are the important asset for a business.

In 2021, multi computing and cloud computing where used which has become old style of the company. Now they all are updating in order to be fit for customer requirements fulfilling. An organization always depends on the customer relationship. They innovate more idea and plan as digital transformation [5]. A Digital transformation is a framework where it says how to move in the environment and make changes for their growth. These components are used in very essential manner to understand the needs of the customer. Communication are the basic important for an organization.



Fig– 2: *ESSENTIAL COMPONENTS*

Network text analysis- This study performed a network text analysis to spot the analysis trends relating to digital transformation within the industry. Network text analysis compasses text mining and network analysis. Text mining is employed to analyses and procure significant data from unstructured matter knowledge. This contains of the network nodes and link that connect on another and show the medical care operating steps facet for the event of the business or an organization. Analysing and decoding and additionally innovating additional ideas for the longer term want and growth.

3. TECHNOLOGIES

3.1 Technologies Trends in 2022

There are some of the technologies becoming trend in the digitalization field. Apart from the technology shown in Fig – 3, there are some other technologies used in the modern business. There are some usages like avoiding direct contacting, using digital payment, multi-cloud architecture and also customer data platform. Multi-cloud is mainly for a combined used of private and public cloud in a same organization. More Technology are used but these are some of the current trended technologies. Customer data platform is of the data are collected in a single source of their place. The organization generally, analysis the data from the customer and upgraded themselves for the development. There are some other trend technologies used in a

business or organization. They are common in all the field of their knowledge:

3.1 5G and IoT

5G is the fifth-generation technology for mobile networks. 5G's primary characteristics include multi-peak data speeds, low latency, improved user experience, better connectivity and availability, and improved network bandwidth. Next upcoming important technology is 5G. Then comes IoT which most of the business and company uses IoT in their field. Internet of Things especially their use of sensor which is commonly used in all areas. In this there are some of important factor includes connected automobiles, shipping and logistic and remote healthcare.

3.2 Zero-Trust Security

Zero Trust may be a security model supported the principle of maintaining strict access controls and not trusting anyone by default, even those already within the network perimeter. Most of the organization adopts the remote add that risk are occurring often that's cyber attack. so as to get rid of or stop from that attract authentication is needed as primary steps within the business.

3.3 Software 2.0

Software 2.0 continues to be at the market entry stage and to implement it, businesses can got to gain experience with DataOps (Data Operations) and MLOps (Machine Learning Operations). during this software system, there needed of deep learning so as to engineered the neutral network. during this software system, it updates the image process in deep learning that transfer through some layer like, input, initial layer, prime layer and output. This spilt the image into totally different kind and at last it comes as one output. to be told this, the worker or folks ought to be provided by a coaching session for the access purpose.

3.4 Data fabric

This data fabric is similar to the automation process. With an example we will explain this process:

- The driver manually drives while the automated features are not put into use of any measure.
- The driver loses focus and then, the automated features get activated and take course corrections whenever required.

This says about the automation features give the idea in the critical time of need. That can prevent from any dangerous issues. So, now a days many of the employee entering into this data fabric field.

Hyper automation

Hyper Automation aims to modify business and IT processes to an oversized extent. whether or not it's RPA, AI or Machine Learning and Low-Code platform. RPA (robotic method automation) is regarding the robotic works, AI is regarding computer science that the machine thinks sort of a person, and low-code platform is regarding the drag and drop idea. This designed the innovative ideas for associate degree business.

AR Cloud

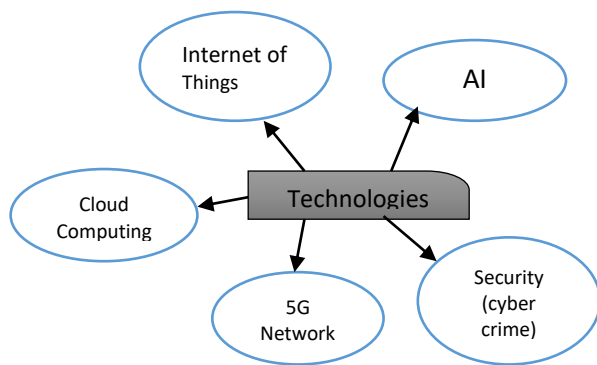
AR Cloud (Augmented Reality Cloud) is like a digital 3D copy of the real-world environment created using its spatial properties. This technology is depended upon the 5G. AR cloud are now becoming a important cloud usage in an organization.

Everything-as-a-Service (XaaS)

This concept can also say as anything as a service. This delivers the need for the customer using traditional method of service (IaaS, PaaS, SaaS) [3]. Some other service also included like Security as a Service, Storage as a Service, Function as a Service and video as a Service.

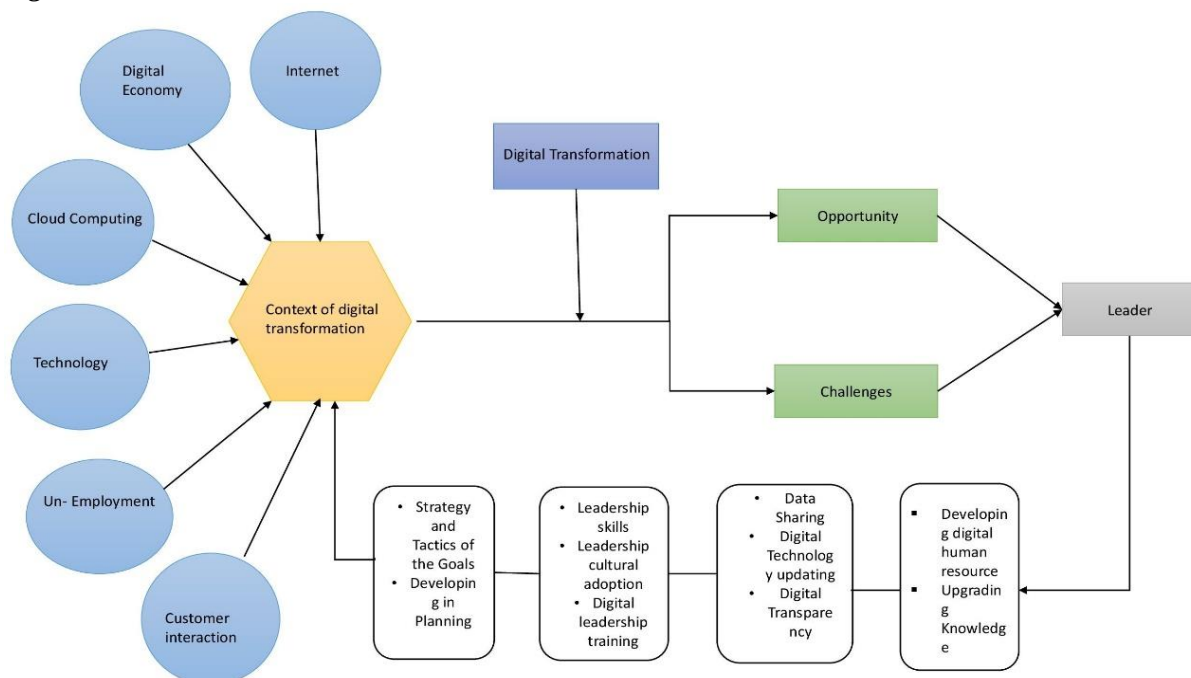
Generative AI

Generative AI is about the creating new content from the original content. This generative AI includes the existing content like image, audio, video, texts to remodel or create the new one. E.g., Face app

Fig – 3: *FOCUSED TECHNOLOGY*

4. MAPPING OF DIGITALIZATION

The Fig - 4 shows that the impact of digitalization that creates trends and also its

Fig-4: *MIND-MAPPING OF DIGITALIZATION*

5. Trends and Challenges:

The trends of digitalization are developing digital human resources which will lower the company's risk in investing in employees. This artificial intelligence would help a company to get work done fast and also prompt. Because it has been proven that no machines would do mistake as Humans do. Developing digital human resources would also help in different ways like recruiting employees for looking after the machines even for emergency

challenges in implementing in it. Even though the opportunity for digitalization in today's world is more, it has major challenges which is associated with trends. This challenges and trends will affect the life of a leader who has to take decisions comparing both challenges and opportunities that will lead him either to a good decision or a worst decision. It also helps a leader in different forms of technologies transformation like IoT (Internet of Things), Cloud computing, Big Data and more. Now, we can see the challenges and trends in digitalization and also its transformation in technologies which helps a leader in decision making.

purposes. The cost will be low because no training will be given to any of the employees about the job assigned to them but instead its maintenance cost would be high which might be a disadvantage in having artificial intelligence in a company. Then, the trend is upgrading knowledge. When we have digitalization, it would help us in upgrading knowledge easily through videos, voice notes rather than having to set aside for reading and learning the manuals for operating each and every machine that a company would give to their employees.

The disadvantage in this is that connectivity issues. We can never say that the connectivity would be in range for all time. There will be so fast range and very low range at times. No one could get through it as it has become major issues in many companies.

Then the trend we are going to see is that data sharing which is one of the best opportunities for a company or also to an individual in saving time and cost for travelling. Data sharing means that the sharing of data through any means of communication. In olden days, they had used telegram and post to communicate between people. But now, we have different communication facilities like WhatsApp, Facebook and other social media. People have become so dependent on these applications which has reduced their time and also saved their cost involved in it. But the interaction between people has reduced and everyone is going behind these applications for their livings. Any people can live even without food but no one is ready to live without these developing technologies. Many medium scales and small industries feel it difficult to get adapted to these technologies and they say it as their major drawback for development of their business. One of the biggest troubles that these small industries are facing is that the knowledge for them in using these technologies are very low as they are low skilled in getting used to it. The cost involved in giving training for the usage of these technologies are pretty high and the time taken by them for learning the machines would be more compared to skilled employees.

For instance, a company in India has imported a machine from Japan and they also got it ready for usage. But after sometime, they saw a damage in it. But none of them know to repair it and again they have to call those Japanese for getting it repaired. So here we have found that the small industries found it difficult to get their data shared. If they shared this problem to Japanese, they would teach them virtually for its repair. This is where they majorly lag. The knowledge of getting to know it will be low for these unskilled employees.

Digital transparency helps a company to not hide anything from their respective employees who is been working as the real owners of a particular company. They also need to disclose their records and data to public which proves that they are not involved in any kind of illegal activity. Digital transparency should be followed by every company and it is the major impact in every company because of digitalization.

Leadership in digitalization means that every individual in an organization is responsible for what they do in the business. Every company must elect a person to act as a leader and in digitalization this leadership skill helps him / her in major way of getting things done. Leadership adoption skill means that the every leader should get adopted their in-built leadership skill which cannot be taught by anyone[2]. Here, the volunteer will work and not everyone can be considered as leader. Only the one who has that capability to get things done will be a successful manager. He should also know how a digitalization plays a vital role in business like digital transparency, data sharing, developing human resources and maintaining human strategies that helps to work and interact with every other colleague to not raise any conflict with them. Now a days, leaders are being given training digitally which also saves them time and training cost that is involved in providing them training.

A Digital transformation strategy is a detailed plan for using digital solutions to improve the physical aspects of your business across engineering, manufacturing and service. Digital transformation is in a broad business strategy developing a roadmap for short-term digital transformation guided by business outcomes which is the essential foundation excluding the technology. Companies of all sizes are seeing evitable business outcomes from digital transformation efforts such as improving efficiency, maximizing revenue growth, and reducing operational costs. In some case, survey of industry or organization professionals found that 92% of companies are already running with the digital transformation. However, the survey also revealed there were various stages of maturity- and success.

According to Wipro Digital survey,” more than one- third of executives cite the lack of clear transformation strategy as a key barrier to achieving the business full digital potential”. Digitalization helps an individual to look after their planning which is a key to achieving their company’s goal and objectives which in future lead them to become a successful company. Planning is the major step every company would do before making any decision regarding their objectives, vision, and mission.

5.1 Advantages of Trends

- Improved potency

One of the most important advantages of implementing Associate in Nursing ERP system into a business operation is that the dramatic improvement in potency. The approach staff communicate from department to department, the continual flow of information across the organization, the seamless transition from part to part over the time period of the client - of these advantages add up to a a lot of economical business method that may save time, money, and resources.

- Hyperbolic Transparency

The integration of Associate in Nursing ERP or SAP system will shine a brighter lightweight on current processes, serving to to spot trends and patterns you'll not have otherwise seen. the flexibility to dive deeper into day-after-day information in period of time permits a steadier pulse on all aspects of the business that keep the wheels turning.

- Price Savings

A lot of organizations pay a decent quantity of cash and time merely maintaining recent, heritage systems and product. Undergoing a digital transformation couldn't solely economize, however it'll save each time and cash once you go recover from the mixing of a lot of economical processes and faster drawback identification.

- Data-driven client insights

Information may be the key to unlock client insights. By higher understanding your client and their desires, you'll be able to produce a business strategy that's even a lot of customer-centric. mistreatment each structured information (personal client information) and unstructured information, like social media metrics, these insights will facilitate drive business growth. information permits ways to produce a lot of relevant, customized, and agile content.

5.2 Disadvantages of Trends

- knowledge Security:

Digital technology means huge amounts of knowledge may be collected and hold on. this could be personal data regarding people or organizations. It may be terribly troublesome to stay this knowledge safe. simply one breach will mean huge amounts of personal data going into the hands of criminals, terrorists, business rivals, foreign adversaries, or different malign entities.

- Complexity:

We not perceive the workings of the devices and machines that we tend to act with on a day after day. Fixing a contemporary automobile currently means that interacting with a computer; it's not simply mechanical. employing a phone will involve grappling all kinds of difficult settings. Minor glitches within the operations of a laptop computer will price each time and expense.

- Privacy Concerns:

It's become abundant tougher to possess personal privacy within the digital world and that is on prime of the risks of your personal knowledge being taken or oversubscribed. Digital cameras watch and record our movements publicly places. Minor indiscretions will currently haunt a private for keeps once they are announcing on the net. dominant your personal data is extremely troublesome and typically not possible.

- **Social Disconnect:**

There is Associate in Nursing increasing tendency for folks to socialize and communicate via digital devices instead of through real-life contact. this could simply cause a way of disconnect and isolation.

5.3 Advantages of Challenges

- **Competencies:**

If an organization need to actually become digital homeward-bound, it should support its staff, providing learning programs that facilitate them to subsume this new management approach and with huge knowledge. It means that having the ability to scan and perceive new typologies of unstructured knowledge, to method them and to require selections consequently. corporations have to be compelled to develop each technological and analytics capabilities in their groups.

- **Structure Culture:**

It is the place wherever trials and learn approach begin turning into the leading approach of brooding about processes. a brand-new mind-set is needed to with success operates during this fast-moving world, wherever the sole probability to survive the competitors is to produce solutions, although they're in a very beta version and may have some shortcomings. Moreover, networking activities among departments ar required to share knowledge and adopt a scientific instead a function-based purpose of read.

- **Support:**

Internal support, in terms of senior managers and homeowners acting as advocates of this transformation. If the company's leading folks don't believe and support these changes, it's quite troublesome staff ar actuated to alter their approach and exit from their temperature. External support, in terms of policies, to assist corporations during this journey providing each resource to enhance their informative systems and technologies, and learning programs.

- **Technology:**

This is the last purpose as a result of technology is simply associate degree enabler of digital transformation. however, it's not comfortable to ensure a good digital transformation. Thus, corporations don't ought to begin from technology, however use the simplest technology to realize their goals.

5.4 Disadvantages of challenges in digitalization

- Accelerating business processes with automation
- Improving the customer experience
- Better decision making
- Reliability and security
- Creating digital workplace and culture

6. DIGITAL DEVELOPMENT

Digital growth means growth of technologies and alternative impacts created owing to digital growth within the world. This growth of technology would facilitate a nation to spot however way its growth has compact the event of the country. each country's growth depends on its technologies as a result of a rustic is alleged to be developed only if it's sensible data in digitalization. throughout the pandemic, shoppers have moved dramatically toward on-line channels, and corporations and industries have responded successively.

The survey results ensure the speedy shift toward interacting with customers through digital channels. They conjointly show that rates of adoption ar years before wherever they were once previous surveys were conducted. The customer-facing components of structure operative models don't seem to be the sole ones that are affected. Respondents report similar accelerations within the digitization of their core internal operations (such as back-office, production, and R&D processes) and of interactions in their provide chains. not like customer-facing changes, the speed of adoption is consistent across regions. The speedy

migration to digital technologies driven by the pandemic can continue into the recovery.

There are few principles in accordance with growth of digital in a country,

- Design with the user
- Build for sustainability
- Reuse and improve
- Understanding the existing ecosystem
- Data driven
- Address privacy and security

7. CONCLUSION

Digital transformation is the adoption of every organization in digital technology they use which might in turn trigger disruption and drive revenue. Digital transformation trends help in emerging which will hold the potential to accelerate business growth. The trends that drive from digital transformation are undeniable. This also states that the importance of digital in today's world and its impact on how people are depending on it for each and every application they use. The technology has developed too far that which cannot be broken down to old form anymore. Even the schools and colleges and many more educational institutions are benefitted because of this development of digital in the world. Not only educational institutions but people also became dependable on digitals which is now as none can live without those gadgets.

The trends and challenges which have been discussed above could come to a conclusion that the major role of digital transformation in every individual's life. The major challenges faced because of digitalization is that the connectivity issues, literacy rates cybercrimes. Cybercrimes is the most suspected crimes that have been faced by many individuals of the growth of digitals in the world. This cannot be avoided unless otherwise growth of digital transformation has reduced. The digital transformation growth is likely to be high comparing to the growth of literature, and even

also the growth from Stone Age to modern age. This artificial intelligence has grown to a level where every company is so interested to make their company as a digital one. Digital transformation has set up a range which cannot be diminished further. Everyone has to learn about. No matter what technology you plan to pick up on, the idea of digitalization is to innovate and introduce unique selling point which is continuing to contribute towards quantifying return on investments. This paper came up with covering various areas relating to digitalization like digital transformation, its trends and challenges and more.

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