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COMPARISON OF SELECT DIGITAL MATURITY MODELS FOR DIGITAL TRANSFORMATION DYNAMICS

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ABSTRACT

Decision-makers and managers within their organization need to transform routines and behavioral structures in order to address the difficulties presented by the digital world. The study involves the comparison of different digital maturity models in order to take insights on the model used for evaluating an organization's level of digital maturity. The study compares dimensions and design parameters used for building different models for digital maturity, widely implemented in the industry. This gives an insight for selection of parameters while attempting to implement a plan for digital transformation, where various risks and challenges are also seen. The results show underlying differences in terms of content-related and methodological approaches, companies face various challenges, integrating new technologies, ineffective gathering and leveraging of data, privacy assurance, and security issues in digital transformation and for their digital road map as well as giving a comparative benchmark.

1. Introduction

Digital transformation has emerged as an essential phenomenon for large as well as small and medium enterprises. It is the accelerating revolution of business processes, activities, competencies, models, and business practices to completely utilize the opportunities and respond to the changes posed by disrupting technologies(Vial, 2019).Digital transformation means the adoption of a significant digital landscape so as to fulfil the requirements of, partners, employees, and customers (Remane, 2017). With the amalgamation of various digital technologies such as cloud computing, big data, social media, and mobile internet (Bharadwaj et al., 2013), we are witnessing industries making profound modifications in existing and working towards the development of upcoming business models(Fitzgerald et al., 2013). Hence, it is the process of moving towards the digital era by adopting emerging disruptive technologies in the current business model. In this digital world, organizations are changing at a faster rate and undergoing sustainable development to have the option to recognize and adjust to the volatile environment.

A digital transformation framework is an outline that represents a strategy about how an organization paves its way through a period of significant change because of the current evolving business transformation. It is a kind of tool that is applied across the whole organization and guides all the management levels. Cognizant developed a digital transformation framework that encompasses four areas that include digitizing the customer experience, operations, products and services, and the organization in a whole. According to an adaptable digital transformation framework given by Dion Hinchcliffe, digital transformation framework is a never-ending cycle of disruption, growth, refinement, and renewal supported by key pillars of cultural change, skill-building, executive leadership, business redesign, strategic goal, and roadmap. In technical terms, it is the application of intensely evolving digital technologies supported by fifth-generation connectivity, data analytics, and internet of things, artificial intelligence, smart devices, and different digital channels to reinvent customer relationships and business processes (Schwertner, 2017).

With the introduction of the fourth industrial revolution, business models were the center of focus in both scientific research and management practices(Osterwalder et al., 2010). From a managerial point of view, "digital maturity" is defined as the position of a company's level of digital transformation and explains what activities the companies are planning to deploy in terms of carrying out transformation endeavors and what they have already accomplished (Chanias & Hess, 2016). A maturity model sheds light on how organizations build their transformation strategy and lays down paths on what steps organizations take for their transformation (Teichert, 2019). In academic literature, there have been attempts made in order to access a digital maturity degree such as the revenues generated by digital offerings in the form of products and services. But these indicators portray only some aspects of digital transformation. These one-dimensional indicators are not enough to have a wider view about the concept of digital maturity models. Thus, the companies must adopt multidimensional maturity models. Business Model

innovation and change takes time. Companies deploy new technologies and ideas with the help of business models(Chesbrough, 2010).

2. Literature Review

2.1 Need for Digital Transformation:

Industries in this digital era are digitizing important functions within their vertical operations and simultaneously their horizontal partners along the value chain. Digital transformation coupled with business model innovation have fundamentally changed customer's behaviors and expectations, pressurized traditional organizations, and disrupted numerous markets. Companies in the digital era period need to depend on comprehensive methodologies including digital strategy, digital capabilities, IT development, collaboration, transparency, agility when coping with digital transformation (Fischer et al., 2020). There are three main factors that are driving the need for digital transformation. Firstly, the increasing internet penetration and simultaneously rising adoption of accompanying technologies such as cloud computing, crypto currencies, speech recognition, and digital payment systems. Secondly, the intensity of competition from big global firms such as Apple, Amazon, Facebook, Alibaba have started to dominate numerous industries. Thirdly, change in the consumer behavior as a response to the digital revolution as there is a shift in the customer preferences to online purchases (Verhoef et al., 2019).

2.2 Review of design parameters:

2.2.1 General Facets:

2.2.1.1 Number and Focus of Dimensions:

These are the main characteristics of digital maturity models, which represent the areas of competence that lays down the foundation for the subsequent determination and evaluation of maturity levels. These dimensions encompass the aspects of transformation management, digitization of internal operations, digital products and service offerings, and digital customer interaction.

2.2.1.2 Rationale:

This is mainly the framework of the digital maturity model that includes the brief introduction, key areas of emphasis, and the objective of using that model.

2.2.2 Data Collection and Analysis:

2.2.2.1 Digital Maturity Level Determination:

Various models have adopted quantitative and qualitative approaches to determine digital maturity. Qualitative models mostly employ semi-structured management interviews and the assessment is done on the basis of interpretation. Quantitative models usually follow structured questionnaires with Likert scales such as using a summarized score for each dimension.

2.2.2.2 Levels of digital maturity:

A large number of maturity models conduct an evaluation and assess on the basis of numerous evolutionary maturity levels [7]. While some models make use of levels based on status which describe the level of digital penetration in their internal processes, other models make use of certain archetypes of companies such as agility, customer focus, and strategy.

2.2.3 Data Presentation:

2.2.3.1 Result Visualization:

Models make use of numerical scores that can be expressed in percentages or absolute figures.

2.2.3.2 Prescriptive Edge:

This mainly includes the action items that these models suggest companies to work on, in the near future, in order to build a digital ecosystem and be the leaders in their industry. This pertains to the various area of focus such as enhancing customer experience, effective strategy, and deploying digital technologies.

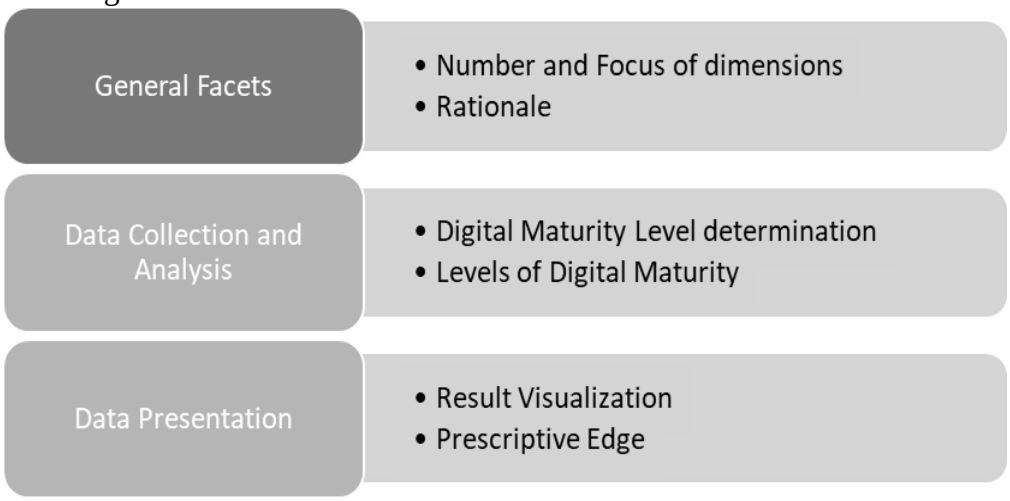

Figure 1: Design Parameters

Source: (Chanias & Hess, 2016)

2.3 Overview of select few digital maturity processes of businesses:

To identify the status of a company in digital transformation a maturity model (Berghaus & Back, 2016).

2.3.1 PWC

PWC proposed a linear maturity path along the four archetypes (Remane, 2017). PWC surveyed around 2,000 partakers segmented into nine industrial sectors amongst 26 countries, so as to explore the advantages of digitizing company's vertical and horizontal value chains along with preparing any company's digital product & service portfolio. Based on this survey conducted PWC developed a framework for assessment of digital maturity. The framework involves the evaluation of companies across seven dimensions which are discussed ahead in the section (PWC, 2016).

In this PWC digital maturity categorizing is done in four different digital maturity levels or archetypes:

1. **Digital Novice**: The companies in this level are still standing at the early phase of their digital transformation venture. They use traditional means of operation and their online presence is segregated from offline channels and is mainly product focused. They have digitized and automated their sub processes and incorporated integration in their yield with their partners. Their partial analytical proficiency is majorly based on partially manual data extracts and fragmented in-house IT-Architecture. Their functional focus lies in "silos".
2. **Vertical integrator**: The companies in this level have crossed the testing stage and have already started deploying digital technologies. They have a service portfolio and digital product with software, data, and machine to machine (M2M) network as key indicators that differentiate them from others. The companies have started deploying data analytics reinforced by business intelligence (BI) systems. They have a homogenous in-house IT architecture that helps in connecting different departments. They have involved cross-functional collaboration but the next critical challenge lying ahead of such companies is to structure their digital activity and to perform consistently.
3. **Horizontal Collaborator**: Horizontal integration involves stretching across customers and external stakeholders and utilizes intensive data with full process integration throughout the network. The companies have started deploying business intelligence (BI) systems by consolidating all relevant information sources (both internal and external), decision support systems, predictive analytics, and event management systems with high-performance computing and IT-architecture.
4. **Digital Champion:** These are digitally mature groups of companies integrating customer journey management with the help of digital marketing, data analytics, and different sales channels supported by CRM technology. These companies have deployed predictive analytics for automated event handling and real-time monitoring with the help of advanced databases and deep learning algorithms enabling decision support.

Understanding the core dimensions of PWC digital maturity model:

1. **Digital business model and customer access**: Deploying innovative solutions along with adoption of platform-based approach so as to optimise customer interaction and enhance customer experience. Digital services and products mainly provide customers with advanced solutions in a digital ecosystem.
2. **Digitization of service offerings**: This means the proliferation of existing products, such as addition of smart sensors, smart devices, and communication paraphernalia in combination with business intelligence tools, along with the development of evolving products which aims at providing fully integrated solutions. With the help of new ways of collecting and analysing data, companies can create information and refined items according to the client requirement.
3. **Digitization and integration of vertical and horizontal value chain:** This means that all the business operations starting from the product launch to

logistics, are integrated and digitized across the whole organisation vertically. Horizontal integration goes beyond the processes that happen within an organization and includes customers, suppliers and third party partners.

4. **Data and analytics as core capability:** This pertains to the analytical capabilities of the company reinforced with central business intelligence (BI) system. Various latest technologies include predictive analytics, neural networks, deep learning, and many more.
5. **Agile IT architecture:** The focus of the companies should lie on developing effective digital solutions and catering to new customer demands in an agile manner. There should be transparency among all the departments working under the same project.
6. **Compliance, security, legal & tax:** The focus of the companies should lie in building a digital trust with all the stakeholders. This includes practices in order to prepare data security approaches, optimizing the value chain to setup standards in compliance processes.
7. **Organization, employees, and digital culture:** Collaboration between all the levels of management. Focus of the companies must lie on stakeholders and culture in order to bring digital transformation.

2.3.2 MIT/ Capgemini

The MIT Centre for Digital Business in collaboration with Capgemini Consulting developed a framework for assessing the level of digital maturity of an organization. According to the framework organizations can be bifurcated into two dimensions (Westerman & McAfee, 2012). "Digital Intensity" is the first dimension which is a collection of strategic assets, investments, digital capabilities, and digital elements. The next dimension that drives digital transformation is "Transformation Management Intensity", which mainly includes managerial attributes such as governance, engagement, and digital vision.

In this digital maturity model, the company is represented in a 2x2 matrix segregating four types of digital maturity levels.

1. **Beginners** are immature in both the above mentioned dimensions. These are the companies which are still at the beginning of their digital transformation journey. They use traditional digital means such as enterprise resource planning systems and do not exploit opportunities that digital means offer. The reason behind this could be ineffectiveness in using new technologies ineffectively or they are totally unaware about the upcoming disruptive technologies.
2. **Fashionistas** are the companies that have crossed the testing stage and have already started deploying various disruptive technologies. However, they lag behind in management expertise that is required to create a successful digital transformation strategy. Though "Fashionistas" are impressive externally but they lack steadiness and substance. The further challenge lying ahead of these companies is proper coordination of their digital practices so as to create an overall business value.

3. **Conservatives** are those companies which are well informed about the prospective of advanced IT-enabled services and are capable of handling it effectively and efficiently. They may have an expertise in the digital area and are well versed with the necessity of a company's digital transformation. However, these companies view upcoming technologies with suspicion.
4. **Digiratis** are the group of companies that are digitally most mature. They have adopted the latest digital disruptive technologies and operate with a bold vision and digital culture, resulting in better productivity. Consequently, these companies have a competitive edge over other companies in their domain.

Understanding core dimensions of MIT/Capgemini digital maturity model:
1. **Digital Intensity**: The group of companies that are highly mature in digital intensity dimension drives more revenue with their current physical resources. According to a survey done by Capgemini, digiratis and fashionistas have a competitive edge over other companies in their industry domain and lead by around 8% in industry performance. This includes two sub-dimensions namely, strategic assets, internal operations, and digital capabilities.
2. **Transformation Management Intensity**: The group of companies that are highly mature in transformation management intensity are more profitable. According to a survey done by Capgemini, conservatives and digiratis are 10-25% more gainful than their average peers on the basis of a number of measures including net overall revenue and EBIT margin. This includes three sub-dimensions namely, digital vision, governance, and engagement.

2.3.3 Deloitte/TM Forum

Planning for a digital future means adapting digital expertise in which an organization's culture, people, and structure are working towards achieving company's objectives (Kane et al., 2016). Deloitte proposed a digital maturity model in partnership with TM Forum. This model is the tool that is used for determining digital maturity according to industry standards. The core dimensions included in this digital maturity model are namely customer, technology, strategy, operations, and organisation & culture. The framework allows communication service providers to be evaluated on the basis of two dimensions. These dimensions are digital service enablement and digital services provisioning (Newman, 2017).
In this digital maturity model, the company is represented in a 2x2 matrix segregating four types of digital maturity levels.

The five levels of digital maturity:
1. **Initiating:** In this level, organizations are in the nascent stage and have just started to be assimilated into some of the business operations.
2. **Emerging:** In this level, organizations are in an advanced stage and beginning to be included into all operations that are performed on the daily basis.
3. **Performing:** In this level, organizations have set clear goals and objectives, formulated a plan, and implement agility throughout all the departments of the company.

4. **Advancing:** In this level, organizations are expected to expand their plans and objectives to bring new and innovative ideas and strategy to advance their capabilities in the area.
5. **Leading**: In this level, organizations are considered as thought leaders in the domain and lead the industry.

Understanding the 5 core dimensions of Deloitte/TM Forum Model:

1. **Customer:** One of the most important dimensions, which emphasises on enhancing customer experience, improve customer engagement, analysing customer behaviour, and build a digital trust with customer. Building customer loyalty by providing customers with services such that customers see the organization as their digital accomplice.
2. **Strategy:** The most important dimension of this model, which focuses on having a competitive edge over other companies in the industry, by taking digital initiatives and building an effective business strategy. This includes strategy in key areas such as brand management, finance & investment, stakeholder management, ecosystem management amongst many others.
3. **Technology:** This dimension pertains to the triumph of digital methodology by assisting with creating, process, secure, store, and trade information to meet the demands of customers at minimal expenses. This includes various sub-dimensions such as applications, data& analytics, network, security, connected things amongst many others.
4. **Operations:** Deploying digital processes and digital business practices in order to drive strategic management and improve business efficacy and viability. This dimension includes various sub- dimensions such as agile chain management, real-time insights & analytics, integrated service management, standards & governance automation amongst many others.
5. **Organisation & culture:** Creating a culture within an organization with talent processes and governance so as to lead towards the upward digital maturity curve. This dimension includes sub-dimensions such as leadership & governance, workforce enablement, talent management amongst many others.

The action items include:

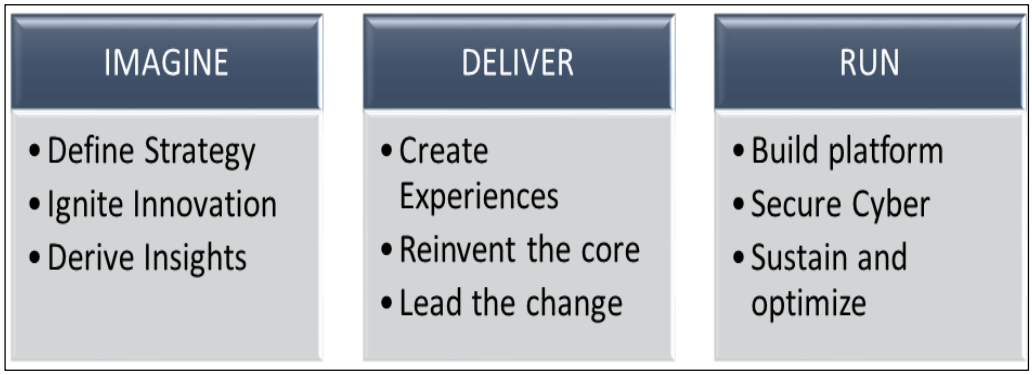

Figure 2: Action items recommended by Deloitte Maturity Model
Source: (Deloitte, 2018)

2.3.4 Forrester's Digital Business Maturity Model 4.0

This model was presented in 2014, which depends on the scoring standard that today's advanced pioneers can utilize as a touchstone about their development level in order to drive competitive strategy, make operational agility, and empower customer experience. The model helps in assessment of foundational aspects of a company's overall digital transformation level such as implementation of effective strategy, digital staff resourcing, and business functions efficacy. This model also accommodates reviewing the proficiency related to a company's digital marketing capability, and impact of digital deployment in sales and service interactions. The four dimensions across which firm's digital maturity is measured include culture, technology, organization, and insights (Gill & VanBos, 2016).

The four ascending levels of digital maturity:

1. **Level 1: Skeptics**

The companies lying in this level are technology inactive firms mostly major financial services, public sector firms, and telecom sector companies having limited experience in innovation. They have an unclear digital strategy and lack in proper deployment of effective marketing technology, customer experience management, social media, and digital training. According to the survey, only 26% of such companies have employees that are equipped with strong digital marketing skills.

2. **Level 2: Adopters**

The companies lying in this level have taken initiative in deploying digital marketing and are ready to put resources in the base architecture so as to scale their digital ambition such as any e-commerce website or CRM platform. They have an effective marketing strategy than skeptics but have limited software budget [20]. Adopters have limited internal sources and mostly outsource their digital and marketing services which do not provide them with the first-hand learning. Consumer privacy and data security are the two areas where adopters skew problematically high.

3. **Level 3: Collaborators**

The companies lying in this level are more apt to collaborate internally and externally to enable practice and innovation with digital. According to the Forrester's Global Business Technographics Marketing Survey held in 2015, around 94% of collaborators are centred towards the overall customer interaction. They are early adopters of data analysis in operations and have skilled manpower and effective strategy in creating brand awareness.

4. **Level 4: Differentiators**

The companies lying in this level show strong revenue growth. Differentiators are the most mature group of companies that prioritize critical marketing, real-time data monitoring and processing, and data analytics in order to enhance customer experience. Differentiators deploy e-business prowess and digital marketing to internal or external facing functions in order to refine connection, bringing innovation, and enhancing customer experience. This group of

companies tries to unite business and IT under a same umbrella in order to achieve common goals that co-create tactics and an effective strategy.

Understanding the 4 core dimensions of Forrestor's Digital Maturity Model 4.0:

1. **Culture**: The 'culture' dimension caters to an organization's focus towards digital advancement and considers the need to empower employees with digital technology and equip them with digital trainings.
2. **Technology**: This dimension adheres to the need for adoption of cutting edge and emerging technologies by the company.
3. **Organization**: This dimension caters to the steps taken by company to support governance, digital strategy, and execution.
4. **Insights**: This dimension caters to realize how well an organization utilizes business and customer information to measure their success metrics in various domains.

2.4 Challenges faced by companies while implementing digital transformation:

There are various challenges faced by companies while they are on their journey towards digital transformation. Digital transformation involves profound changes within the business model of the company, which may occur in business processes, resources, and operational methods or culture (Henriette et al., 2016).

Major challenge faced by the company includes:

1. **Insufficient internal skills:** The biggest challenge is centered on internal issues such as leadership, culture, agility in an organization. For a company to take an action on such issues, the company must implement digital agility, which means to readily adapt, modify, and reconfigure currently used digital assets and capabilities. Dearth of digital training and culture in an organization is adding to the difficulty faced by companies while implementing digital transformation. According to an interview done by Henriette, one of the senior consultants responded "the automation of business activities change business processes and can lead to deeper problems for the company"(Henriette et al., 2016).
2. **Integrating new technologies:** Adoption of latest technologies such as machine learning, streaming analytics, artificial intelligence, and cloud computing into the current business model demands is a big challenge for companies. Lack of connectivity between business and technology is another big issue. Having numerous data silos might result in repetition of work, extra manual effort, and confusion between heterogeneous groups with regards to effective collaboration. Various diverse approaches towards the storage of data make cohesive blending arduous.
3. **Strategic Stakes:** Lack of an effective strategy is also one of the major challenges companies face while implementing digital transformation. Companies need to be more flexible in order to offer digital products and services as per customer requirements.

4. **Short-term view challenge:** One of the most enduring challenges is ensuring that planning done for the adoption of digital transformation goes beyond the first three to five months. Digital transformation projects involve many key internal and external resources for a longer time period. Budget, staff, and time exhaustion becomes really inevitable.

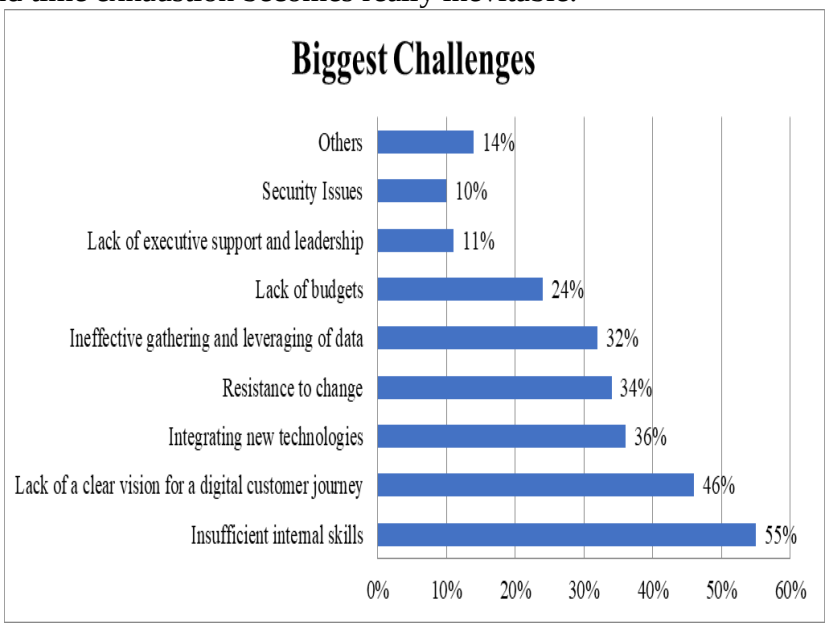

Figure 3: Biggest challenges faced by companies while implementing Digital Transformation

Source:("Digital Transformation Readiness Survey Summary," 2018)

3. Research Methodology

The maturity assessment of different models is based on different parameters and each dimension can be evaluated based on the scoring adopted by each of the models considered for comparison in the study. A logical comparative analysis has been done in order to compare and classify different maturity models. The secondary data analysis method is used to collect insights on four select digital maturity models from authentic white papers and research papers. Yet, even based on this logical analysis and comparison, no recommendation or answer could be given on which one of the models out of four potentially suits better for evaluating a company's status of digital transformation. The fitting of the model to a particular company majorly depends on the preference and need of the management, for an instance if management favors a more sophisticated model or whether an evaluation shall be conducted only on the top level.

The data for research has been gathered through numerous online-based research papers, articles, whitepapers, and website reports.

3.1 Comparative Analysis

Table1. Comparative Analysis of select digital maturity models

Design Parameter	PWC	Deloitte/ TM Forum	MIT/ Capgemini	Forrestor's

Focus on specific Dimensions	7 dimensions representing the transformation are as follows: 1.Digital business models and customer access 2. Digitization of products and service offerings 3. Digitization and integration of vertical and horizontal value chains 4. Data and analytics as core capability 5. Agile IT architecture 6. Compliance, security, legal, and tax 7. Organization, employees, and digital culture	5 core business dimensions empowering business through every step of the company's transformation journey 1.Customer 2. Technology 3.Strategy 4. Operations 5. Organization & Culture	"Digital Intensity" including 1. Strategic Assets 2.Internal operations 3. Digital Capabilities "Transformation Management Intensity" including 1.Digital Vision, 2.Governance 3.Engagement	4 dimensions representing a holistic view of a company 1. Culture 2. Technology 3. Organization 4. Insight
Rationale	PWC digital maturity model emphasizes on building a comprehensive solutions for customers. It focuses on developing a future digital ecosystem that can provide a 360 degree view of the company	The Deloitte/TM-Forum digital maturity mode states that strategy plays the most essential role in defining the level of digital	The digital maturity model proposed by MIT founded that large firms mainly focuses on implementing technologies like analytics, mobile, social media, and embedded devices to enhance	Forrestor's digital maturity model 4.0 suggests that companies should focus mainly on three areas: developing an adaptive digital strategy, accessing digital activities across the whole organization, and

	across partners, sellers, as well as customers.	maturity followed by focus on their customers.	customer experience and improve external and internal operations.	bringing operational excellence into their digital execution.
Digital Maturity Level Determination	This model follows a quantitative approach in the form a score for each specific dimension and then assigning a digital maturity level	Quantitative approach considering the summarized score for each sub-dimension	Quantitative method based on an average summarized score derived from online questionnaire for each dimension	Quantitative approach is adopted by calculating a digital maturity score and based on that the level is decided.
Levels of Digital Maturity	4 maturity levels namely 1.Digital Novice 2.Vertical integrator 3.Horizontal Collaborator 4.Digital Champions	5 maturity levels namely, 1.Inititaing 2.Emerging 3.Performing 4.Advancing 5.Leading	4 maturity levels namely, 1.Beginners 2.Fashionistas 3.Conservatives 4.Digiratis	4 Industry levels namely, 1.Skeptic 2.Adopter 3.Collaborator 4.Differentiator
Result Visualization	Numerical Score, Maturity Level Allocation	Maturity Level Allocation, graphical illustration through 2*2 matrix	Maturity Level or Archetype Allocation in a form of graphical illustration based on a 2*2 Matrix	Numerical Score, Maturity Level Allocation
Prescriptive Edge	This model suggests companies to: 1. Shift towards platform-based approach 2. Focus on people	This model suggests companies to come into action and focus on:	This model suggests companies to focus on: 1. Customer Focus 2. Empower employees	This model suggests companies to focus on: 1. Build a strategic plan 2. Develop

	3. Improve processes 4. Implement new technologies 5. Build digital trust	1. Strategy 2. Target digital capabilities 3. Enhance customer experience	3. Organizational change	customer-centric metrics 3. Follow marketing impact analysis
Examples	Scandinavian FMCG industry	Mobile Telcos Communicati on Service Providers	L'Oréal Nike Asian Paints Retail	Nestle

3.2 Descriptive Analysis

Table 2: Forrestor's Digital Maturity Model 4.0

DIMENSIONS	WHO	WHAT	HOW	WHY
Forrestor's Digital Maturity Model 4.0				
Culture	Employees	NA	1. Empowering employees with digital technology 2. Communicating digital vision internally and externally 3. Measure risks in order enabling vision.	Building a digital competitive strategy to outperform peers and prioritizing overall customer experience
Technology	NA	NA	1. Adoption of emerging disruptive technology 2. Leveraging modern architectures such as cloud, APIs in order to promote speed and efficacy.	The company must adopt an iterative, collaborative, and flexible approach to technology development

Organization	Employees and Partners	NA	1. Encouraging cross-functional collaboration 2. Partnering with vendors that help in building digital competencies 3. Prioritizing customer journeys over functional silos	The company must be aligned towards building a digital strategy and supporting governance and execution
Insight	Employees and Partners	NA	1. Using customer centric parameters like customer lifetime value, net promoter score in order to measure the success of the company 2. Ensuring employees how their exhibition binds to corporate objectives.	The company must measure that customer insights inform digital strategy make sure that customer insights actively steers the company's digital strategy.

Table 3: MIT/Capgemini Digital Maturity Model

DIMENSIONS	WHO	WHAT	HOW	WHY
MIT/Capgemini Digital Maturity Model				
Digital Intensity	Customers are conditioned	1. Strategic Assets 2. Internal Operations 3. Digital Capabilities	The degree of investment in technology related initiatives that will result in transforming the way company operates and build a digital strategy.	This helps in generating revenue through their existing assets
Transformation Management Intensity	Employees are conditioned	1. Digital Vision 2.Governance 3. Engagement	The degree of investment in the leadership capabilities needed to introduce digital transformation in an organization.	This helps in being profitable.

Table 4: PWC Digital Maturity Model

DIMENSIONS	WHO	WHAT	HOW	WHY
PWC Digital Maturity Model				
Digital business models and customer access	Serving customers with complete solution	NA	1. Providing data-driven services 2. Providing integrated platform based solutions 3. Integrated digital solutions across supply chain	Ensuring the development of new business models with digital innovative products and service portfolio
Digitization of products and service offerings	Customers' needs are met	NA	1. Deployment of CRM 2. Digitization of products by using smart technologies 3. Using latest data collection methods	Integrated management of customer journey with the help of digital marketing, data analytics, and sales channels taking into consideration the customer empathy.
Digitization and integration of vertical and horizontal value chains	Suppliers, Customers, and Employees	NA	1. Near real-time provision to essential information for data analysis 2. Integrating processes across the entire organization. 3. Stretching across partners, suppliers, customers, and all the key stakeholders beyond the internal operations	Supporting companies to build a wholly digitized and integrated partner landscape that includes self-optimized and virtualized processes with main focus on core competency
Data and analytics as core capability	NA	NA	1. Deploying big data analytics and advanced algorithms 2. Data analytics to help drive decision-making 3.Central use of predictive	Analytics will help in better decision making and eventually in building intelligent systems design. Deploying real-time inline quality supported by Big Data Analytics will helps in

			analytics with the help of intelligent database for real-time optimization, processing, and automated event handling	maintaining efficiency and is cost-effective.
Agile IT architecture	Employees	NA	1. Developing a connection between different departments. 2. Maintaining transparency throughout the organization.	To have a single data lake with outside information coordination Functionalities and adaptable organization. Build incrementally with integrated learning cycles and continuous attention to technical excellence.
Compliance, security, legal, and tax	NA	NA	1.Data security approaches must be taken 2. Access rights control and setup standards in managing sensitive customer Pdata and compliance processes	Optimizing the horizontal and vertical value chain, prepare data security approaches, optimizing network for compliance processes
Organization employees, and digital culture	Employees	NA	Structured and cross-functional collaboration	Collaboration will result in being a key value driver. Focus of the companies must lie on culture and people to drive transformation.

Table 5: Deloitte/TM Forum Digital Maturity Model

DIMENSIONS	WHO	WHAT	HOW	WHY
Deloitte/TM Forum Digital Maturity Model				

Customer	Customers' needs are met	1. Customer Engagement 2. Customer Insights & Behavior 3. Customer Experience 4. Customer Trust & Perception	1. Extending customer lifetime value (CLV) 2. Using preferred channels of interaction 3. Staying connected throughout their future journey on and offline	Enhancing customer experience by delivering Omni-channel, IOT, mobile, and digital experience
Technology	NA	1. Emerging Technology and Applications 2. Data Management 3. Delivery Governance 4. Connectivity 5. Security	1. Igniting innovation through cutting-edge technologies 2. Adopting latest disruptive technology 3. Driving automation	To enable digital processes with the help of Omni-channel and commerce platforms, taking into consideration the cloud integration and data security
Strategy	NA	1. Brand Management 2. Ecosystem Management 3. Finance & Investment 4. Market Intelligence 5. Business Assurance	1. Aligning enterprise digital direction with brand, growth, product strategy, and customer experience 2. Perform market competitive analysis	Sustain and optimize the deployment of organization change and platform. Driving value realization and sustained business agility
Operations	Employees	1. Agile Change Management 2. Real-time Insights & Analytics	1. Enhance business efficiency and effectiveness 2. Executing processes by utilizing digital technologies	Achieving business agility, deploying data analytics, and automation through machine learning as a core capability in order to offer a personalized customer

		3. Integrated Service Management 4. Smart Process Management		experience
Organization & Culture	Employees	1. Leadership & Culture 2. Standards & Governance 3. Employee Enablement	1. Evolving organizational design 2. Redesigning business capabilities and functions to evaluate for digital	Supporting progress in line with the digital maturity curve by maintaining transparency among all the departments and developing an culture with whole governance and hiring talented workforce.

4. Results and Conclusion

On the off chance that companies want to sustain in globalized and increasingly digitalized markets, the companies need to continually align with the changing market trends and to cope with an exceedingly dynamic and competitive business environment (Johnson et al., 2008). Digital Transformation across various industries has led to a rapidly transforming business environment which offers augmenting opportunities for new capabilities and initiatives. Along with this, it is crucial for organizations to likewise deal with the challenges and risks that are brought into the environment and its effect on the existing landscape to drive optimum value from their digital initiatives. Despite all the risks that are present, organizations cannot overlook the opportunities that 'moving to digital' brings forth along with the profound impact that it shall have on them. The decision on how to implement digital transformation is long-term structuring for the company and is considered as a strategic choice.

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