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Mind the Gap: It's About Digital Maturity, Not Technology

Kemal Özkan Yılmaz
İstanbul Kültür University, Turkey
<https://orcid.org/0000-0003-1185-4397>

ABSTRACT

The Covid-19 pandemic has amplified the influence of digital transformation on business entities. Although it is becoming more feasible to invest in digital technologies due to their swift progression in terms of reaching higher technical capabilities and better pricing levels; some companies some companies could not achieve expected improvements in their business results. On the contrary, a remarkable number of companies had the opportunity to develop their businesses by leaps and bounds. Academic research on the subject revealed that a company's digital maturity level is directly related to the company's success and progress in sustainability issues. In this chapter, the concepts of cross-functional collaboration and corporate digital cultures, which are the basic components of achieving digital maturity, which must be coordinated together, are elaborated and an applicable roadmap proposal is tried to be created.

Keywords: Accepting Failures, Cross-Functional Collaboration, Organizing Around the Customer, Corporate Digital Cultures, Collaboration Dynamics, New Ways of Engagement, New Working Styles, Organizational Flexibility, Reorganizing Organizational Boundaries, Risk-Tolerant Culture.

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The COVID-19 pandemic has amplified the influence of digital transformation on business entities. Although it is becoming more feasible to invest in digital technologies due to their swift progression in terms of reaching higher technical capabilities and better pricing levels, some companies could not achieve expected improvements in their business results. On the contrary, a remarkable number of companies had the opportunity to develop their businesses by leaps and bounds. Academic research on the subject revealed that a company's digital maturity level is directly related to the company's success and progress in sustainability issues. In this chapter, the concepts of cross-functional collaboration and corporate digital cultures, which are the basic components of achieving digital maturity, which must be coordinated together, are elaborated, and an applicable roadmap proposal is created.

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“When the digital transformation is done right, it’s like a caterpillar turning into a butterfly, but when done wrong, all you have is a really fast caterpillar.”

George F. Westerman,

Principal Research Scientist with the MIT Sloan Initiative on the Digital Economy

INTRODUCTION

During the last few years, with the incoming support from swift progression of digital technologies, and their applications, technology has elevated the pace of digitalization or digital transformation to another level in daily business activities; therewithal, the Covid-19 pandemic has amplified the influence of the digital transformation on business entities. The challenge for a business or a company is not only to remain competitive, but also to facilitate means of growth by harmonizing the new and the traditional tools, and maybe melting them in the same crucible to generate even better modalities in the pandemic hit business environment.

Some companies take it for granted that, digitization is the sole requirement for success, however this is not enough for remaining competitive, growth or sustainability as obtaining digital technologies is not a difference making competitive edge. Advantages of digital technologies can be experienced with a limited amount of contribution; unless they are supported, and even preceded with a strategic mindset transformation. In other words, attainment of a mindset transformation in a working digital transformation process requires designing for digital maturity, which will be a part of a business strategy formulation, cultural development, and it will not be limited to technology deployment.

As of today, business world still does not have a fixed recipe neither to be nor to keep sustainable, especially during the turbulent times, and during discontinuity as lately being experienced due to Covid-19 pandemic (Miceli et al., 2021). Throughout the chapter, digital maturity will be defined, and its role in digital transformation on business entities will be explained, by trying to emphasize its importance, and analyse its effects aiming to create a roadmap that can be used in business strategy formulation to foster and facilitate sustainability of corporations.

Technological advancements and customers' enthusiast to use technology driven facilitators of interaction accompanied by products and services - or new customer expectations push digital transformation through. Subsequently, corporations head towards developing digital capabilities, not only to confront the competition and even forging ahead, but also to transform their entities (Kane et al., 2017b; Rossmann, 2018; Saliola, & Islam, 2020). Although, this propulsion of *"killing two birds with one stone"* might look like a spontaneous outcome of the requirement of agile organizational structures; but actually, it is a compulsory desire to achieve organizational flexibility (Westerman et al., 2014; Harvard Business Review [HBR], 2020b). At such a point in a company's history, this kind of an action actually ignites the journey to reach digital maturity in which organizational design is to be redefined simultaneously.

Positioning digital transformation with a higher priority and rushing for quick results is regarded as a remedy for achieving resiliency (HBR, 2020b). One of the most used methods for big companies is to acquire a company that has potential or has proven to be promising in e-commerce business (Kane et al., 2017b) as a practical method of becoming a digitized firm. However, being impelled by evolving digital technological capabilities offered in the market, this method usually becomes obsolete after a while, and organizations need to update their

organizational structures and transform both themselves and the touch points and the interfaces with their stakeholders, in order to not to lag behind the accelerating competition and the speed of the consumerization of technology, and to in order to keep resilient and agile (White, 2012; Miceli, 2021).

The most sought-after technologies of a digitized business environment have not changed so much apart from newcomers such as Virtual Reality (VR), Augmented Reality (AR), Machine Learning (ML), Artificial Intelligence (AI), 5G, Internet of Things (IoT), blockchain, and automated decision support systems (Kane et al., 2017b; Neugebauer, 2019, HBR, 2020b; HBR, 2020c), since White (2012) has listed them as adapting to a mobile first focus, big data, cloud computing and search-based applications. Availability of these technological tools changes the way companies do their business which results in organizational productivity and gives room to deal with more value-added activities and finding new ways of determining value chains and inter organizational relationships (Cennamo et al., 2020).

The methodology of this chapter is to unclothe the term digital maturity regarding digital transformation; first by highlighting prominent digital maturity models including the concepts and main dimensions of contemporary Industry 4.0 maturity models and indices. After these dimensions are exhibited, the chapter will define, what digital maturity is, explain its role in digital transformation, why we need it, and will offer a path to facilitate a nurturing atmosphere as a starting point in becoming a digitally mature company with a focused perspective on psychological asset (human)-related organizational dimensions of digital maturity. Digital maturity level/stage assessment is to be mentioned with a brief description to concentrate on the main purpose of this chapter. The core discussion will be mainly around, cross-functional collaboration; cross-communication, organizing cross-functional teams around the customer,

reorganizing organizational boundaries, and collaboration dynamics, and corporate digital cultures; new working styles, new ways of engagement, organizational flexibility, risk-tolerant culture, and accepting failures.

BACKGROUND

It is a good idea to start with one of the humankind's interactions with the digital technology; Neugebauer (2019) states that "the first programmable computer using binary code was the Zuse Z3" getting its name from the creator Konrad Zuse and Helmut Schreyer which was introduced at 1941 in Berlin. In 1971 the first microprocessor was patented; it contained 8,000 transistors (Neugebauer, 2019), and today we are talking in about millions of transistors in a single microprocessor. Technological advancements result in transformation, and they can even be epoch-making by creating new markets and facilitating development of innovative products, services and ideas (Baldwin, 2019; Olszak, 2020). The critical point is that, organizations need to transform themselves as a whole in order to attain merits of these advancements; we name this state of alacrity as organizational digital maturity (Machado et al., 2020).

Forrester Research has determined culture, technology, organization and insights as the components which are required to be possessed at the topmost level of their digital maturity model (VanBoskirk, et al., 2016), which also corresponds with the need to change as whole. There are other maturity models which try to elucidate levels of maturity in different sectors and settings such as Neuhofer et al. (2013), De Carolis et al., (2017), Colli et al. (2018), and Ryan et al. (2020). Table 1 highlights some of the current prominent digital maturity and Industry 4.0 models and indices that are used to assess the current maturity stage of an organization.

Table 1. Outstanding digital maturity, and Industry 4.0 models, and indices

DT Dimensions / Model:	The ACATECH Industrie 4.0 Maturity Index	The ACATECH Industrie 4.0 Maturity Index	Industry 4.0 Maturity Model	Digital Maturity Model 5.0. - Forrester	Industry 4.0 Maturity Model
Source:	<i>(Schuh et al., 2017)</i>	<i>(De Carolis et al., 2017)</i>	<i>(Colli et al., 2018)</i>	<i>(VanBoskirk, et al., 2017)</i>	<i>(Şener et al., 2018)</i>
Dimensions / Indices	Resources	Process	Technology	Culture	Asset management
	Information Systems	Monitoring and control	Governance	Organization	Data governance
	Organizational Structure	Technology	Value Creation	Technology	Application management
	Culture	Organization	Competences	Insights	Process transformation
			Connectivity		Organizational alignment

DT Dimensions / Model:	Industry 4.0 Maturity Model for Manufacturing	Dimensions of Digital Transformation	Digital Readiness Index Assessment	The New Elements of Digital Transformation
Source:	<i>(Schumacher et al., 2019)</i>	<i>(Gurbaxani & Dunkle, 2019)</i>	<i>(Philipp, 2020)</i>	<i>(Bonnet, & Westerman, 2021)</i>
Dimensions / Indices	Technology	Strategic vision	Management	Business model
	Products	Culture of innovation	Human capital	Customer experience
	Customers & partners	Know-how and intellectual property	Functionality (IT)	Operations
	Data & information	Digital capability	Technology	Employee experience
	Corporate standards	Strategic alignment	Information	Digital platform
	Employees	Technology assets		
	Strategy & Leadership			

Source: Please refer to second (source) rows of the table.

When Table 1 is studied human-related dimensions can be listed as resources, organizational, culture, organization, human capital, organizational alignment, competences, customers & partners, employees, strategy and leadership, strategic vision, culture of innovation, management, customer experience, and employee experience.

These attempts to create a variety of models as exemplified in Table 1 to manage digital transformation clearly put forward a classification of maturity levels which requires a progressive mindset not only at the individual, but also at the organizational level in order to leap forward and turn challenges en route to opportunities under volatile business environment (Kane et al., 2018). Assessing maturity levels of organizations is related with determining priorities, sketching the right roadmap, and optimizing a firm's journey to digital maturity in a controlled and organized manner to utilize opportunities (Şener et al., 2018) rather than rolling around (Pihir et al., 2018). This vigilant state of mind is a combination of both structural-organizational (policies, procedures, resources, technological infrastructure, etc.) and psychological (engagement level, commitment of leadership, culture, etc.) factors (Wiener, 2009; Machado et al., 2020).

It would also be remarkable to note that, human nature is prone to change, but the speed of change we feel within does not always correspond to the speed of change that is required in a specific organizational setting and environmental conditions such as the available technologies, development level of competition, requirements and desires of the consumers, and time. This correlational situation is asserted as “digital disruption” by Kane et al. (2018); which might become a challenge of organization-wide overall refitment - Neugebauer (2019) calls this as digital revolution- or an incremental process that can be handled with progressive improvements in some structures of the organization if previous positive progress has been achieved earlier.

Kretschmer & Khashabi (2020) also state maturity of the technologies which has to be considered in order to not have uncertainties and excessive costs; on the contrary they also assert choosing a group of crucial processes to avoid the concept of “missing the boat” and falling behind in competition. Timely implementation of maturing or mature digital technologies in such a manner also puts forward effective priority planning to enable effective utilization of resources and promotes fast outcomes and gains in strategically important business processes which requires an assessment of digital maturity stage of a company. Development of digital technologies and harmonization of those within business processes create digital systems, which have the potential of transforming the way of doing things not only at an individual but also in an organizational perspective, rendering higher productivity, better performance, increased value-add, and efficiency of resources resulting higher competitiveness levels (White, 2012; Neugebauer, 2019).

Another compelling factor is the level of overall disruption and the level of competition in the sector of activity; an intense pressure arising from your business area gives no other direction than to leap forward and make away with ambiguity. Such a background also catalyzes enthusiasm and facilitates the psychological perception of the need to act in an organizational setting. Therefore, Kane et al. (2018) suggests to assess a company’s existing digital maturity first, as it would be unevenly distributed throughout the organization. After such as an assessment, which also corresponds to the traditional strategic management current status assessment “is”, it will be more effective to plan which parts are to be cured or invigorated and also which parts can be overhauled faster to realize swift outcomes.

However, there are different approaches to attain transformation; Kane et al. (2018) suggest to handle organizational change in a manageable way instead of an overall holistic

transformation of an organization; while Kretschmer & Khashabi (2020) advise a simultaneous handling and improvement of sets of processes and parts of an organization to not get trapped in the fallacy of incompleteness or to avoid getting adversely affected from other lagging dimensions within the extended organization which also covers the whole set of stakeholders which take part in the value delivery to the customer.

Digital transformation needs a progressive mindset to ignite the transformation journey after a thorough analysis of company's culture, archetype, infrastructure, internal & external factors, previous steps, lessons learned and resources. It is important to emphasize that, organizations and individuals can get better in using digital technologies and even learn to be more efficient by learning more and more each time from thematic practices; the key can start whether with baby steps or with greater scope (Deloitte, 2016; Kane et al., 2018; Neugebauer, 2019; Kretschmer, & Khashabi, 2020). It should also be kept in mind that, as you progress related technologies and your stakeholders do also have the potential to advance both in capabilities and experience, and embrace more work with the joy of achievement.

It should not be disregarded that one of the basic elements that will create a difference in making an organization successful in its digital maturity journey is leadership (Kane et al., 2015a; Kane et al., 2017; Alkhamery et al, 2020; Gorter et al, 2020; Bonnet, & Westerman, 2021).

This chapter is not focusing on a specific sector or a business area; so that, instead comparing and contrasting those models, and making an evaluation; it aims to create a general roadmap on the subject and reveal the important components of the digital maturity in order have a wider generalizability perspective. Human- related fundamental aspects of digital maturity in accordance with the objective of the chapter will be detailed using the following sub-sections.

MAIN FOCUS OF THE CHAPTER

Digital maturity is adapting the organization to compete effectively in an increasingly digital environment (Kane et. al., 2017b). The focused concepts of cross-functional collaboration and corporate digital cultures, which are the basic components of achieving digital maturity, which must be coordinated together will be elaborated in this section.

Cross-Functional Collaboration and Cross-Communication

Incorporation of digital technologies into corporate life while conducting routine business activities is named as digital transformation, thus a collaborative way of doing business and culture as facilitators has to be embedded/adjoined in business model building strategies of a company to enhance effects of utilized digital technologies (Warner & Wäger, 2019).

Transparency cultivates collaboration and cross-communication especially between groups of people which are not put together in a formal structure and generates a win-win situation by learning and even crowd-learning as used in co-creation practices Fletcher, & Griffiths, 2020).

An adequate amount of autonomy in a distributed decision-making atmosphere is a requirement to be embroidered in teamworking which will enable individuals to take on multiple roles such as managing teams, decision-making, participating in decision-making, being consulted, and influencing members. In a digital workspace any of those roles can be required in a sudden; being in need of crafting an immediate solution makes strict hierarchical structures and bureaucracy obsolete (Kane & Philipis, 2017; Birkinshaw, 2018; Kane et al., 2018). The organizational mindset and perspective change, which will be gained through cooperation between functions, which can be monitored with more sharing, openness and transparency by coming to life in autonomous teams while conducting daily work, is a crucial need for

transformation in order to achieve digital maturity (Fletcher, & Griffiths, 2020). Kane et al. (2018) advise that, just checking existence of such autonomous teams will be a meaningful answer to understand how digitally mature a company is. Kane (2017) reports that digitally mature companies are more prone to employ cross-functional teamworking practices.

Digital teams would get themselves more develop on digital strategy comprehension and formulation, on controlling digital ways of doing business throughout the organization, and getting better at digital activities (VanBoskirk et al., 2016).

Organizing Cross-Functional Teams Around the Customer

Companies create value for their customers, the nuance here is; both a traditional and a digitally transformed company also serves for future or potential customers (Correani et al., 2020), the power of digital technologies especially emerge at this point as they enable reach to potential customers in an extensive way. Big data or data analysis helps corporations to address new customer profiles and review value propositions of not only for external customers but also internal customers, and brings up the optimization of value chain processes, procedures and frameworks and for each customer segment.

Fernández-Rovira et al. (2021) pinpoint using big data obtained from the transactions with the customer would be best used to anticipate customer requirements and intentions for constructing loyalty by taking care of general personal data protection rights. On the other hand, as digital technologies speed up the traditional ways of doing business, another important task in corporate agendas would be planning orientation of customers about methods, procedures, digital aids and tools which they need to make use of during their ordinary interactions with your company. Furthermore, asking customer about their needs and expectations can result in a result

in a leap in their loyalty which will also be considered as listening to the voice of the customer and an act of extending boundaries of organizational structures (Westerman et al., 2019).

The other side of the medallion is the task of creating internal upheaval about how customer data can be used not only for innovation but also for customer lock-in and desired value creation by customers (Weritz et al., 2020). There is requirement of data platforms which would serve as means of engagement and mutual learning platforms that are clearly announcing ethical guidelines to proactively avoid any exploitation (Kane et al., 2017b; Kane et al., 2018; Weritz, 2020).

Interaction with external customers can also bring in crowd knowledge and wisdom, so that companies would be forming their networks around them clearly promoting and sharing proofs declaring the importance of openness and (Deloitte, 2016; Fletcher, & Griffiths, 2020). Saarikko et al. (2020) highlight collaboration with an emphasis on the importance of getting your brand recognized which will be encouraging external stakeholders to participate in your transformation journey.

Reorganizing Organizational Boundaries

The customer is out here and a digital organization's capabilities to communicate with her customers have increased thanks to evolving technological advancements and its data collection tools. New methods to interact with the customers are evolving and also existing ones are also developing and companies are offered more or more talented instruments that can be used in their value creation processes (Organisation for Economic Co-operation and Development [OECD], 2019; Fletcher, & Griffiths, 2020; HBR, 2020b). Since companies are in favour of co-creating their products and services directly with the customers and partners, the organization needs to be getting more fluid; on top that cultural change, companies can benefit from digital

technologies to enhance to involvement of their customers into their creation processes (Baldwin, 2019; Kindermann et al., 2020; Kretschmer & Khashabi, 2020). Actually, the information required for improving products and services or making revolutionary developments is coming from the outside of organizations; so that, by logic firms would be extending their boundaries in order to cherish innovative ideas. On the other managerial expertise can also be seized from outside (Yan et al., 2020).

Digital transformation makes things easier for reaching open innovation stakeholders and extends the boundaries of ecosystems (Saarikko et al., 2020). On the other hand, White (2012) reminds that being already connected to customers, and other routinely connected partner companies have already extended their boundaries; today, with the help of technological developments (captured data and transaction capacities) more value generation can be obtained from external parties when compared with the past.

The dimensions of where value is created at a digital company goes far beyond the organization; taking the amount of data generated, considering where it is created and also the interaction density indicate wider span of organizational boundaries. Most of the data is generated wherever a stakeholder is and it can be retrieved in an economical way and can be utilized for value creation (Fernández-Rovira et al., 2021). Additionally, the main idea behind the progression of new product and services of information technology; such as cloud and data warehouse management, is to generate convenience, cost efficiency and extend boundaries (Li & Chan, 2019). A digital platform is the technical interface which serves as a backbone on which digital technologies are build. The boundaries of the organization automatically extend via externally facing platforms which becomes perceivable as ecosystems such as websites, applications and payment systems. These platforms are interconnected with data platforms

handle tons of data and information mostly in an autonomous way in other words they keep boundaries of an organization at a very flexible level (Bonnet & Westerman, 2021). In today's connected world organizational boundaries intersect with those of customers', business partners' and stakeholders' (HBR, 2020b).

Collaboration Dynamics & Capabilities

Mintzberg's (1991) view on becoming an effective organization rely on co-aligning strategy, structure and context. The essence of inter-organizational tasks is a combination of collaboration, coordination, and cooperation; where cooperation chases coordination (Castañer & Oliveira, 2020). Kane et al. (2018) asserts that the more digitally mature the companies get, the more they delegate decision-making down to individuals which creates an atmosphere of collaboration and facilitates growing number of unhierarchic leaders. In order to make the most out of such a structure, "*absorptive capacity*" is advised be increased; not only by deploying more information to employees in order to foster learning, knowledge transfer and innovation payoff, but also utilization of digital technologies and teaching how to efficiently use them (Lane & Lubatkin, 1998; HBR, 2020a; Yang et al, 2020). The best way is to increase the interaction also with external stakeholders to increase the potential of knowledge assimilation and collaboration mindset development.

Warner & Wäger (2019, p. 335) have develop a process model that identifies four main capabilities which are consisting of nine variables; putting forward digital sensing (digital scouting, digital scenario planning and digital mindset crafting), digital seizing (rapid prototyping, balancing digital portfolios and strategic agility), digital transforming (navigating innovation ecosystems, redesigning internal structures, improving digital maturity), and contextual factors (external triggers, internal enablers, internal barriers) as main categories.

Companies usually have to take part in their stakeholders' digital transformation strategies who take part in their ecosystems, this spontaneous situation requires collaboration and coordination between internal and external bodies bringing in contingent role changing which ranges from being a contributor to being decision-maker. Such dynamic roles/capabilities for acquiring and utilizing external knowledge are nurtured with more exposure to external bodies and promoting openness (Reck & Fliaster, 2019). Since organizations are becoming more flexible, people are undertaking different roles at a time (which foster leadership skills) that amplifies exposure to more ambiguity, which is resulting in increased pace in business life. The cure to overcome this need for speed is collaboration which is to be undertaken without worrying too much about organizational boundaries to not to block leveraging effects of business ecosystems, out of which we will possibly pull innovation opportunities as complimentary results of knowledge accumulation and having a better understanding of the environment (Kane et al., 2018; Yang et al, 2020).

Mastering digital transformation creates two capabilities which Bonnet & Westerman (2021) name as digital capability and leadership capability which render it possible to manage transformation in a planned way without creating inefficiencies (Westerman et al., 2014).

Dynamic capabilities such as *“balanced redundancy, requisite variety and cognitive discretion”* nourish business models and transform them into gear wheels of a more harmonious machine and they serve to create better version of a company that is designed for future. This harmony can be achieved through the presence of a set coherent capabilities; when such a situation can't be assured, transformation and firm objectives will not be achieved within schedule (Warner & Wäger, 2019).

The VUCA (Volatility, Uncertainty, Complexity and Ambiguity) concept can be recalled to be integrated with fluid organizational structures and boundaries to form a more profound state of sustainability, which are this time voluntarily extended on purpose by organizations that are running after agility and overall improvement on stakeholder basis. (Burchardt & Maisch 2019; Fletcher, & Griffiths, 2020).

As people are exposed to more digital technologies, adapting themselves to the conditions of tomorrow has in a way become a learnable element. As the cooperation between teams increases and people continue to work in more different teams which have dynamic member list based on the contingency requirements of the assigned task, the continuous learning required by the organization can come to life in a more dynamic way thanks to the cooperation between teams (Kane, et al., 2018; Neugebauer, 2019).

Corporate Digital Cultures

One of the most precise and to the point definitions of culture is has been brought in by Waterman et al. (2019): “Culture is what happens when the boss leaves the room.” Basic components of culture; shared norms, values, implicit traits and beliefs shape the way things are handled managed in an organization, as well as the support and the commitment of leadership are major determinants of a firm’s management style, level of democracy, depth and extend of collaboration and innovation behavior, and performance (Westerman et al., 2019; Nakata, 2020).

Kane et al. (2015b) argue whether technology has the ability to change culture or not; and he concludes that, although; technology is a crucial driver for change, culture serves as a facilitator for the adoption of digital technologies, which he also names together with leadership as one of the essential elements of strategy execution that will sustain engagement both on employee and customer perspectives.

For sure, the scope of digital transformation has brought agility and transparency as default attributes into business life. This is a natural outcome of the need of heterarchical organizational structures; at this point not only the organization but also the psychological factor (employees, customers, suppliers, and even other stakeholders) of corporations would adopt to this cultural paradigm shift; moving from keeping the power and information on individuals to deploying (adequate amount of) these to whoever needs them accomplish tasks (Pfohl, Yahsi & Kurnaz, 2015; Burchardt & Maisch, 2019; Pulkkinen et al., 2019; ; HBR, 2020a).

The dark side of culture is its stickiness to tradition and tendency to be stagnant, which may cause blind adherence to business manners that are far from today's needs. However, the fortunate thing about culture is its power to unite humankind around common values and practices which directly ensures the longevity of the useful ways of doing and supports the sustainability of organizations (Westerman et al., 2019). Burchardt & Maisch (2019) assert that:

In order to support this ongoing transformation through learning, self-reflection, autonomy and competence development, a leadership understanding in self-control, self-reflection, empathy, intuition, creativity and attitude is needed. In this sense, through agility, a joint and step-by-step organization with changed acquired skills and the new developed team and leadership understanding as well as with a changed understanding of culture is developed. This agile new framework offers the opportunity to become an innovation in itself and mobilizes the entrepreneurial forces to exploit the opportunities of dynamic markets and new technologies in the company in the future (Burchardt & Maisch, 2019, p. 116).

Collaboration in cross-functional teams is the best practice of efficient learning as enables people to have wider perspective about the work to be accomplished and it also requires the

acquisition of a new culture. In most of the cases unlearning can be a breakthrough to get results quickly without getting stuck in competency traps and embracing new ways of adding value continuously with an innovation perspective (Kane, et al., 2018).

Westerman et al. (2019, p.61) have specified four pivotal principles of digital culture: impact – never give up on changing your surroundings substantially; speed – instead of waiting for all answers act swiftly, make progress and innovate; openness: enlarge your span of your contact and share information / knowledge; autonomy: give room people to decide do not limit them to strict organizational structures and programmes.

New Working Styles

Digital organizations require bilateral feedback continuum to retrieve facts and desires both from the customer and the organization in order to realize timely improvements or innovations which will result in increased effectiveness and utilization. It is a combination of openness and dynamic organizational structure, and in order to control the course of the subordinate-superior relationship, instead of providing proximity in physical distance, it should be focused on innovation that eliminates the need or problem as experienced during Covid-19 pandemic (Kane et al., 2017b; Fletcher, & Griffiths, 2020).

Digitalization brings a growing amount and wealth of data. The interaction with the customer is shifting to information based-services instead of structures that are product-centric. Bonnet & Westerman (2021) present Michelin Global's transition from being a manufacturer to an additional value provider as a tire management service:

Michelin connected its products using embedded sensors that collect and transmit valuable data on usage, distance, and maintenance needs. Its Fleet Solutions business now provides its customers with comprehensive and convenient tire management services

that deliver better cost control, fewer breakdowns, and less administrative work (Bonnet & Westerman, 2021, p. 87-88).

Not only information but also leadership roles are handled in a distributed way; this has a positive reflection also on psychological maturity level of the stakeholders and results in autonomous engagement, and it also helps to learn and disseminate digitalization tools quickly (Kane et al., 2015; Kane, et al., 2018; Zomer et al., 2018). As economies become digital, the role of leaders is evolving towards inspiring people as members of a community of leaders and their commitment to organizations. Today's leaders' main success criteria are to facilitate and create an atmosphere where every involved individual's or institution's ideas and feedback is articulated (Ready et al., 2020).

Today's digital transformation gives a greater meaning to daily operations of a company; operations are interconnected with business models serving as bridge to bring together customers and employees, and creates the infrastructure (with the help of the digital platforms) to uncover experiences. It can be thought that this is totally technical, but the aim here is to highlight that in order to think about workforce automation, first companies would be equipped with the culture to welcome such augmentation ideas, would have enough knowledge in order to consider dynamics in operations, and also to welcome decision-making by using data. This is more a conceptual transformation rather than a technical one (Kane et al., 2018; Bonnet & Westerman, 2021). Digitalization's core building block is delivering and deploying information that enable new knowledge management tools and creating value in an automated structure making processes and systems more efficient and effective (Jabłoński & Jabłoński, 2020; Yang et. al., 2020). Most of the information flow in a company is automated thanks to digitalization and employees and managers have reach to timely data (HBR, 2020b) which makes old style long

meetings obsolete; however, culture still remains the main decisive factor whether the earned time will be used for other means or for traditional long meetings.

There is another important point about working styles; Kane et al. (2017b) also argue that innovation should be seen as the main responsibility for any employee or someone who has a stake in the longevity of a company. Stakeholder point of view is strengthened by shared goals and incentives that are designed for the benefit of the whole. Digital maturity's objective is to transform individuals into innovators.

New Ways of Engagement

Organizations have to engage both their customers and employees this section will be detailing both of the perspectives. Warner and Wäger (2019) states that employee find it interesting to check what is new in their sector and carry this task which they call “digital scouting” with great engagement as it helps them to keep up with contemporary development and even to have an idea about with what other companies are busy. People are aware that they can gather valuable intelligence about the market so that they can reckon their role in strategy formulation. Customer engagement is a desired outcome of digital transformation from start; offering faster solutions and seamless data via digital platforms enable companies to personalize data flow and interactions for different personas or customers segments. As a result, the customer is treated in a more comprehensive way and has more access to more information (more than ever) with an option to engage in social platforms if the companies are offering such services (Ryan et al., 2020; Weritz et al., 2020). The more digitally mature a company is the more engaged customers she will have as one the goals of starting a digital transformation journey.

Digital leaders, learning platforms, social platforms, autonomous decision-making systems, chatbots, and big data analysis are the most common means used to generate engagement (Colli,

2018; Baldwin 2019; Ryan et al., 2020; Weritz et al., 2020). Zomer et al. (2018) states that digitalisation is also used for talent engagement. Main values of a digital culture which are impact, speed, openness, and autonomy empower employees and propagate the will to transform the company to an advanced version of herself (Westerman et al., 2019).

Westerman et al. (2019, p. 61) have specified four pivotal principles of digital culture: impact – never give up on changing your surroundings substantially; speed – instead of waiting for all answer act swiftly, make progress and innovate; openness: enlarge your span of your contact and share information / knowledge; autonomy: give room people to decide do not limit them to strict organizational structures and programmes. Automation and low code systems for system users give room to focus on higher value adding activities and even generates time to think about future requirements of a company and facilitates strategic reviews (HBR, 2020b). Studies reveal supporting evidence that employees are expecting reach to data about how they can improve the way they work and the outcomes of their work which can be considered as autonomous learning (Kane et al. 2018; Ryan et al., 2020).

The fundamental factors of contemporary customer experience are experience design, customer intelligence, and emotional engagement. Experience design firstly starts with understanding customer personas and quite related with consumer behavior practices in terms of inferring insights is the crucial part of the process. Making sense out insights also require related digital technologies to be aligned to enable observation, listening and experimentation with customers. Customer intelligence is gathered by digital technologies but can be interpreted or predicted whether by humans or by human aids like artificial intelligence (AI), machine learning (ML), augmented reality (AR) and similar technologies which are generally more accurate, proactive and faster. Companies are getting help again from digital technologies create touch

points with the customer which are designed carefully to enhance to create emotional engagement (Bonnet & Westerman, 2021).

Managing the related operations and crafting employee experience with the help of digital platform are the task to be undertaken to make it possible to interact with the customers and manage that interaction. In a digitally mature culture employees enrich value that is retrieved with customer communication so that both the customers and the employees should be taken good care of simultaneously. Augmentation technologies increase productivity and performance saving more time for dealing with customer requirements. In order to keep employees motivated and their contributions to the goals of the business at the maximum, their skills should be developed in line with competition and technological advancements. Such an effort will also result in multi-skilled employee development, will be creating potential leaders, and will generate rotation possibilities which facilitate agile and learning organizations (Bonnet & Westerman, 2021).

Getting inspired from Kane et al. (2018) and raising the meaning of their words to those of J. William Marriott and Sir Richard Branson; it will be in place to finalize this subsection using the following motto: “Develop digital leaders, so that they will take care of your company and customers.

Organizational Flexibility

The contingency approach requires organizations to be flexible enough to react instantly. Digital maturity is the way to increase the competence levels of leaders. As a company matures digitally, it becomes more flexible. For this reason, companies on the journey of digital maturity regard maturity as a strategic and cultural flexible element, especially considering that the external

environment and instant business practices may change constantly (Reck, and Fliaster, 2019; Fletcher, & Griffiths, 2020).

Innovation can't find ground under strict organizational boundaries and rules; creating a culture that is emphasizing the importance of value sharing and transparency is a good starting point to shift to a more flexible structure as Google does. Transparency in declaring objectives within organizations will generate momentum to achieve higher performance levels and sustain a more conscious belonging collaboration-teams' responsibilities (Westerman et al., 2019).

Having a flexible organizational design is a requirement of sustainability and strategic scenario planning; which also ensures faster response time to customer demands and business environment needs strategically. Since designing your organization for flexible situations will allow you to react with sudden updates and assign different roles to stakeholders, it will also prepare the necessary ground for the development of digital maturity and give the option to revise its direction if there is any defection (Fletcher & Griffiths, 2020; Weritz et al., 2020). Dynamically designed digital platforms which elevate effectiveness and utilization of information technology infrastructure form the hardware required for agile organizations (Li & Chan, 2019). However, Machado et al. (2020) remind a key parameter to be used is the digital maturity level of the organization as whole, while deciding about the implementation timing of new technologies. They name these maturity levels as organizational, digital, and smart maturity. Furthermore, they define these levels' features and enucleate differences while examining them in two pillars as maturity level and roadmap for maturity. In the state of roadmap for digital maturity, concentration would be more on nurturing a digital culture and concentrate on strategy.

Baldwin (2019) has stated how important it is to have flexibility in remote-working practices which was a popular way of doing business even before the pandemic lockdown. There are many

studies stating that, the biggest weapon of companies that can continue their activities without interruption is flexible organizational structures (Fletcher, & Griffiths, 2020; Saliola, & Islam, 2020; Miceli et al., 2021). Self-organization and autonomy are common traits of flexible organizations; in other words, agile teams and adaptable collaboration teams (Burchardt & Maisch, 2019).

Risk-Tolerant Culture & Accepting Failures

The biggest determinant whether a company has a development mindset or not is to employ a risk-tolerant culture. Learning is generally considered as risky issue because of unlearning and the risk to not to achieve a competency level in what is to be learned (Gupta & Bose, 2019); but also, risk-taking culture eliminates risk by learning; and especially when we consider the fact that a learning mind is must to generate innovation. On the other hand, employees are prone take more risk in digitally maturing companies as the culture of accepting failures have good ground and due to higher maturity level people are more open to experimentation (Kane et al., 2018; Zomer et al., 2018). Lately conducted studies advise companies to build a culture which promotes sharing of new ideas and giving those ideas company-wide testing opportunities, learning by iteration and experimentation, finding new ways of doing things, openness in sharing failures experimentation and protecting people who iterate and experiment (Kane et al., 2018; Alatovic et al., 2020).

Implementation of digital technologies have two contrasting facets: the first one is the risk elimination such as avoidance of human error by automation (Popović-Pantić et al., 2019), and the second one is confrontation of risk which comes into question when internet technologies are to be updated (Furr & Shipilov, 2019; McGrath & McManus, 2020). This chapter's approach is to eliminate the second type of risk by learning required skill sets and planning. Building up

digital leadership as a talent competency with the support of company's leadership (Kane et al., 2017b; Zomer et al., 2018) is the best risk aversion strategy. Alkhamery et al. (2020) assert that the failure of many firms in the digital world is a result of poor leadership which lack creativeness, profound knowledge, loyalty, being visionary and robust collaboration and networking.

In a digitally transformed business world's main risk can be defined as losing your digital talent, so that in order to keep people within the ecosystem companies would think beyond traditional trainings; creating a learning atmosphere is an imperative which would have a wider span by being open to incoming collaboration from external bodies and would make the most out of social platforms (Kane et al., 2017b).

Alatovic et al. (2020) pinpoint to employ a Chief Digital Officer (CDO), which is named as Chief Transformation Officer (CTO) by Gorter et al. (2016). That officer's main task would be priming passion, accepting failures and deploying a risk-tolerant culture while enhancing the digital maturity of the corporation. In some cases, there might not be room for such a position due to the type of the firm or its structure (common for entrepreneurs); so that the tasks can be carried out by a digital leader who would provide vision and purpose (generating direction), create conditions for risk-taking, iteration and experimentation (facilitating innovation), empowering people for taking action (performing), exercising boundaryless collaboration and creating more inspirational leaders (make people lead) (Kane et al., 2018).

SOLUTIONS AND RECOMMENDATIONS

Incorporating digital technologies does not mean that they can be used effectively and efficiently. Companies should review the digital maturity level of their employees, systems and infrastructure before technology acquisition and deployment steps, and lay the groundwork for

digital maturation in order to accelerate the return on investment and not to fall behind in the competition.

If the planned gains cannot be achieved by making large investments in digital technologies, the companies can reach an economic condition that threatens their sustainability. It should not be forgotten that a company that is ready for digital technologies can get ahead of its competitors in the short term and enlarge the gap with mediocre performers.

This chapter advises that, companies would start the starting point for the digital transformation journey of a company would be updating its culture and creating an agile system that is also bonded to external stakeholders welcoming cross-functional and cross-organizational collaborations. Cross-functional collaboration standalone is not adequate for today's connected world in which co-creation of services and products is replacing the traditional in-house development mentality; companies do also need to organize their cross-functional teams around their customers with the help of enabler digital technologies. The concept of agility is to be positioned with utmost priority as this cultural and collaboration capabilities' shift is dynamic and progressive in character. The digital maturity journey does not have a fixed destination at which ultimate success can be declared.

Today, it is already taken granted that distributed systems are more secure – thanks to blockchain technology. The same condition is also valid for an organization about leadership; distributed leadership should be conceded as an embedded trait of corporate digital cultures which help organizations to become more competitive, agile and sustainable. It is important to get trained about multiple capabilities and when it is done for leadership, an organization does not have to rely onto a few her resources.

Cross-functional collaboration gets aligned with contingency planning necessities; people can take on multiple or variety of duties and while more employees are getting in contact with are aligned around more customers, companies also get capable of responding to customers' needs and requirements in a more in-time and in-full mentality manner. Such an alignment around the customer will generate a reciprocal refinement customer and employee experiences. Changing culture and getting people used to collaboration is longitudinal process; so that, there is no perfect time to start a digital maturity journey. The competition does not stop and there can always be some obstacles or constraints, that is why it is important to plan and start the transformation phase

A digitally mature culture can motivate people to try without bothering about making mistakes, accepting failures is a virtue in learning organizations and a digitally mature company has to keep learning in order to keep the pace with the ever-evolving digital technologies. Unlearning and welcoming better ideas not only failures will be another remedy for maturing companies since it is necessary to unlearn in order adapt to a new routine whether it requires a mental or procedural challenge.

FUTURE RESEARCH DIRECTIONS

The concept of digital maturity, which has already increased its popularity in recent years, has become a subject of more studies, especially during the pandemic period, since the institutions that have already started this journey got ahead of their competitors and provided a long-term competitive advantage. This popularity seems to increase as digital maturity is a continuous activity.

This chapter is running after a common recipe which can be utilized in various organizational settings and sectors. The topic is extensive enough to carry out research on

specific sectors. It can be a good idea to deep dive into service industry sectors; even comparing manufacturing companies with the ones which require more soft skills such as service sectors.

Another concentration area can be focusing on learning and unlearning, and its correlation with the customer experience management, in order to search for practical advice. The relationship between employee and customer experience will be a good area to research too; a model which tries to evaluate conjunction points. Many research projects can be created based on generalization or comparison in different or the same sectors, which will reveal the differences and / or similarities of these mutual experience concepts.

Studies that reveal the relationship between employees' entrepreneurial behavior and digital maturity can be investigated with new models in different settings or countries. Such a study can led to an intercultural comparison.

With comparative longitudinal research models, how the companies that have achieved digital maturity today and their sustainability metrics are changing overtime can be investigated.

How digitally mature companies determine their goals can be a research area which will possibly point out other potential areas to study. Digital maturity level assessment also remains as an extensive research area in order to sustain a complementary guide for organizations to their make progress in a more systematic way.

It can insightful to understand whether there is room or not for coopetition amongst employees in a digitally mature company; if yes, another study can be to understand the effects are positive or not.

CONCLUSION

While closing the topic, recalling Drucker's (2003) famous quote "culture eats strategy for breakfast" and blending it with the emphasis on the way we do things today and the potential

way of doing business tomorrow (Fuller et al., 2019), again puts forward the idea that a sustainability securing culture is first to be primarily embroidered into organizational structures, and then the brotherhood of blood between strategy and organizational culture are to be intertwined. In an atmosphere provided in this way, it will also be possible to benefit from the digitalization efforts at maximum efficiency.

Mintzberg's (1991) view on becoming an effective organization relies on co-aligning strategy, structure and context, which he names as "doing it all together". collaboration can be achieved. Similarly, establishing a cross-functional cooperation order can be achieved by realizing a cultural shift which promotes experimentation and trial & order as standard perspective.

A chief transformation/digital officer role can be used to accelerate maturity journey as advised by Gorter et al. (2016), and Alatovic et al., (2020), and can ensure that the organization is staying flexible; such a role can especially generate a plan to effectively utilize distributed leadership practices by an empowerment plan. Digital leaders also play an important role in the dissemination of acquired knowledge that will have role in updating strategies and vision of their company. Competition never sleeps; so that, companies need accelerating solutions as employing such an officer. Digital maturity speed can even be used a market entry barrier in some sectors.

Using various digital technologies in engaging with customers can also bring in new information and knowledge with the prerequisite of being open to external collaboration and being able to re-establishing organizational boundaries. In fact, it would be correct to admit that today's digitally mature companies do not have organizational boundaries; This acceptance will create the basis for organizing around the client for collaboration and learning, as well as for

organizational flexibility and the non-biased creation and acceptance of new ways of doing business.

There is room for new research about the topic, as detailed in this chapter a multi-cultural setting might be more insightful and increase cross-cultural collaboration amongst researchers.

Calling Westerman's quote - right transformation is turning into a butterfly - to mind, that is given at the opening of the chapter, it is noteworthy to state that, when the aim is maturing there arise a dilemma due to the life span of a butterfly; transformation or in other words getting digitally mature according to contemporary criteria is the sole way to keep sustainable and requires both structural and cultural level flexibility.

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