

THE DIGITAL TRANSFORMATION: A PREMISE OF AGILE ORGANIZATIONS

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ABSTRACT

The paper aims to underline the influence that the gender and age of employees have on the strategy of digital transformation in organizations. The research was conducted between September and December 2020 on a sample of 185 respondents from various organizations in the field of vehicles whose organizations have started a process of digital transformation. The results of our research have shown that there is a direct relationship between digital transformation and the agility of the organization and that the gender and age of employees partially influence the digital transformation strategy in organizations. Moreover, the organization's vision and mission must be at least one-step ahead of the digital transformation strategy. Thus, vision and mission must be the key components that underline the particularities of the digital strategy and not the other way around.

KEYWORDS: *agility, digital transformation, mission, strategy, vision.*

DOI: 10.24818/IMC/2021/03.14

1. INTRODUCTION

The 21st century, marked by the Third Industrial Revolution, has witnessed a fundamental transformation in the way we relate to ourselves, others, organizations, and society. Initiated in the 1940s, with the advent of the first lamp computers and impelled by the Internet, the Third Industrial Revolution was accelerated in the modern period by technological advances and the explosion of data. Just as the steam engine and electricity have revolutionized entire economic sectors since the 18th century, so have applications such as the *Internet of Things*, *Big Data* or *Cloud* transforming modern society into a digital one.

We live in a period in which the pace of change is accelerating, and the periods dominated by a particular *industrial era* are shortening. In all its dimensions, transformation cycles are initiated by technical innovations, followed by a series of adaptive transformations of society. Technology is becoming increasingly accessible to a wide range of users, and the evolution of the number of connected terminals (500 million in 2015, 26 billion in 2019, projection of 75 billion in 2025, Statista) foreshadows a world in which digitalization and connectivity become the standard. This revolution profoundly affects us by offering new opportunities for development and imposing the need for continuous adaptation.

The individual is directly affected by digitization because he/she is somewhat forced to change, in order to not be excluded from society and/or the organization. Therefore, the individual uses new technologies and learns to have a hybrid relationship with them. Based on technological progress, the individual gains a new role in the relationship he maintains with organizations, finding himself/herself the promoter of digital technological transformation.

For organizations, the opportunities for information processing offered by new technologies translate into several opportunities to improve customer relations, transform revenue sources, or

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reduce costs. At the origin of these changes lies a new philosophy that places the customer at the center of concern. The evolution of customer needs and the emergence of agile competitors ready to provide innovative responses have imposed a new reality. In this context, digitalization is not an end in itself but a new approach to providing a consumer experience superior to the competition. The execution of this vision often requires the transformation of organizational culture, IT infrastructure, skills, or business strategy.

Despite the difficulty of carrying out a transformation process of great complexity, adaptation is imperative, as a dominant position is no longer sufficient to guarantee the organization's sustainability, as evidenced by the demise of organizations such as Kodak or Nokia. One of the conclusions drawn from digital companies is that the traditional competitive advantage can quickly become obsolete. The absence of mistakes is not a good enough strategy in front of competitors, such as digital shark behavior that quickly identifies new trends in technology.

2. LITERATURE REVIEW

The expression *Digital Transformation* (DT) has gained in popularity in the last decade, being used to designate the change that has occurred both in society and in organizations under the influence of digital technologies. The literature review abounds in many contexts in which DT is used, especially from a theoretical point of view. Thus, scholars face difficulties distinguishing between a digital transformation strategy and an IT strategy beyond the confusion of the terms digitization, digitization, and digital transformation.

The importance of digitization for organizations is reflected by the increase in investments made by them. The percentage of the budget spent by IT infrastructure organizations has evolved from less than 5% in the early 1965s to more than 50% in the late 2000s (Dudézert, 2018) and will continue to grow in the coming years (IDC, 2019).

The many benefits of digital solutions explain the attention they enjoy. In a study of 114 business organizations, Zhu (2004) establishes a positive correlation between Information Technology (IT) infrastructure and developing online commerce. A proper IT application can lead to increased sales, lower operating costs, and accelerated stock rotation. Delmond et al. (2013), identifies the four main components of a high-performance IT infrastructure:

- A technical base consisting of hardware components and software programs
- IT specialists and their added value (skills, methodology, and experience)
- Distribution of information via the Intranet, network communication, and access to information
- Digital applications are used by different departments, but also resource management systems

Carr (2003) opposes a different point of view, questioning the importance of information technology in gaining competitive advantage and comparing the spread of new technologies throughout history. The author argues that a resource can create a competitive advantage only as long as it is scarce.

Therefore, the organization's digitalization is not an end in itself but a creative process, more or less efficient, to improve the consumer experience. This definition calls for digital transformation, which sums up the adaptation processes of individuals, organizations, and society to the changes induced by digitalization (Khan, 2016) and is a new model of using digital artifacts, systems, and symbols (Bounfour, 2016).

Before initiating a digital transformation process, traditional organizations must diagnose the *risks* associated with the *status quo* and the *opportunities* offered by adopting a digital strategy. We consider as necessary to do a rigorous analysis of the following elements: external environment, organizational weaknesses, and consumer expectations. The analysis results may indicate the need to initiate a digital transformation process, depending on the sector in which the organization evolves and the level of digital maturity.

The development of new technologies affects all organizations, in all sectors, even if at a different pace (OECD, 2019). To respond to the aggressive development of innovative start-ups, traditional companies initiate a process of digital transformation designed to allow them to consolidate or develop their market position (Collin et al., 2015).

The need for digital transformation is evident insofar as this process allows the adaptation of traditional organizations to the realities that shape the current economic environment. Digital solutions must be implemented to serve strategic objectives. In this perspective, the digital strategy becomes an organizational business strategy adapted to a digital age. A characteristic element of digitally mature organizations is the overlap of digital strategy with organizational strategy and the synergy between analogous and digital processes.

Digital transformation can be initiated for defensive, offensive, or a combination of the two motivations. From an offensive point of view, the digital transformation is generated by the need to create and capture value in an environment reinvented by new technologies, and from a defensive point of view, at the origin of this transformation is the fear of being marginalized or replaced by to purely digital actors.

Burlea-Schiopoiu and Burdescu (2016) consider that organizations that initiate digital transformation processes do it under the pressure of internal factors (employees and the need to reduce costs) and external factors (customers and competitive environment).

The digital transformation is also felt in the employees' need to provide a way of life outside and inside the organization. The new technologies, independence, and speed in execution, acquired in the private sphere, are in antithesis with a slow and strongly hierarchical organizational system. Employees are looking for an environment that develops the interaction and information system offered by the Internet.

Utesheva et al. (2015) consider that a transformation of the organizational identity is required if the digital transformation is extensive and leads to establishing new relationships between the organization and other stakeholders.

Agility, considered as the need for immediate reaction to internal and external impulses, is another axis of work evolution. The need for agility is supported by the very nature of the objects through which the work is performed. The activity is carried out with the help of computers, smartphones and tablets, objects present in personal life. More and more programs for reporting, project management (Burlea-Schiopoiu, 2009), remote equipment, or instant messaging are adapted to mobile devices, including the dissolution of the boundary between the professional and private spheres.

Start-up companies also contribute to changing the vision of work, because they are characterized by a mode of operation based on a user-friendly work environment, a permanent dynamic, constant exchange, and the encouragement of personal initiatives.

Silicon Valley organizations exert a real fascination and attract talent, driving the transformation of traditional organizations that want to retain valuable employees.

Taking into account the previous arguments, we formulated the following hypotheses:

H1: The gender of employees influences the process of digital transformation

H2: The age of employees influences the process of digital transformation

The theoretical model of our research is shown in Figure 1.

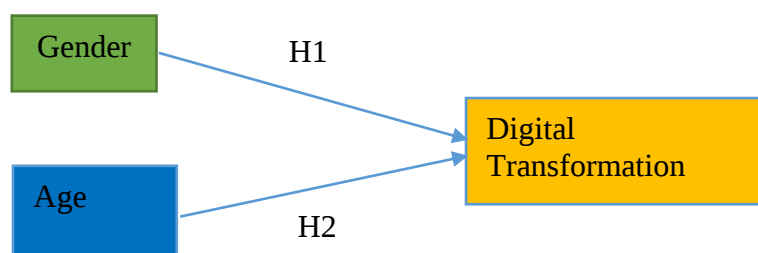


Figure 1. The theoretical model of scientific research

Source: created by author

3. METHODOLOGY

Our research was conducted on a sample of 185 respondents employed in companies in the automotive field, 100 women (54.1%) and 85 men (45.9%).

By age categories, the structure of respondents is predominant for the category 31-40 years of which 81 respondents are part (43.8%), followed by the category of 41-50 years with 39 respondents (21.1%), of the age category 20-30 years with 32 respondents (17.3%), of the age category 51-60 years with 26 respondents (14.1%) and the age category over 60 years with 7 of respondents (3.8%).

For the gender variable, it was coded with 1 - women and with 2 - men. For the age categories, it was coded as follows: with 1: age category 20-30 years, 2: age category 31-40 years, 3: age category 41-50 years, 4: age category 51- 60 years, and 5: age group over 60 years.

The Digital Transformation variable has four items measured on a Likert scale from 1 (to a very small extent) to 5 (to a very large extent) as follows:

DT1 - To what extent do you agree with the statement: Your organization has initiated a digital transformation strategy in order to adapt to the effects produced by new technologies?

DT2 - To what extent do you agree with the statement: Digital transformation promotes sustainable development?

DT3 - To what extent do you agree with the statement: The digital strategy supports the vision and mission of the organization?

DT4 - To what extent do you agree with the statement: Your organization will become more agile due to the digital transformation initiative?

The Cronbach Alpha coefficient for the four items of the TD variable is 0.775 above the 0.7 thresholds.

Table 1 presents the descriptive statistics of the research variables.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gender	185	1	2	1.46	.500
Age	185	1	5	2.43	1.051
DT1	185	1	5	4.20	.871
DT2	185	1	5	3.94	.784
DT3	185	1	5	4.11	.893
DT4	185	2	5	4.14	.693

Source: SPSS

We note that for the digital transformation, the highest average corresponds (4.20) to item DT1, which proves that the organization has initiated a digital transformation strategy in order to adapt to the effects produced by new technologies. Thus, 79 respondents consider that, to a large extent, their organization has initiated a digital transformation strategy, and 77 of the respondents stated that to a considerable extent, the organization has such an ongoing strategy.

Item DT4 has the second average (4.11), demonstrating that respondents believe their organization will become more agile due to the digital transformation initiative. Thus, 96 of the respondents consider, to a large extent, that there is a direct relationship between the digital transformation and the agility of the organization, and 58 of them consider that the digital transformation greatly influences the degree of agility of their organization.

On one hand, with an average of 3.94, respondents are more skeptical that digital transformation is a process that promotes sustainable development (45 respondents are neutral). On the other hand, they consider that the digital strategy is in consensus and even supports the vision and the mission of the organization (154 respondents believe that to a large and very large extent the digital strategy influences the vision and mission of the organization).

Table 2 presents Collinearity Statistics (Variance Inflation Factor - VIF).

Table 2. Outer VIF Values

Variables/Items	VIF
Age	1.000
Gender	1.000
TD1	1.430
TD2	1.542
TD3	1.745
TD4	1.505

Source: SMART-PLS

We notice no collinearity problems between variables, the values being between 1.000 and 1.745, below the threshold of 5 (Belsley, 1991), which leads us to the stage of results and discussions.

4. RESULTS AND DISCUSSIONS

The correlations between the variables demonstrate that digital transformation is a process that takes place regardless of the gender or age of an organization's employees, as shown in Table 3.

In the table 3, it is observed that there are both positive and negative correlations between the gender variable and the items of the digital transformation variable. Therefore, we state that **hypothesis 1 is partially validated**.

Positive correlations were recorded between the variable Gender and DT1 (.050), which proves that regardless of gender, respondents believe that the organization's digital transformation strategy aims to reduce the negative effects of new technologies and enhance the beneficial effects.

Another positive correlation is between Gender and DT4 (.017), which, even though it has a lower value than the previous correlation, still demonstrates that employees, regardless of gender, perceive digital transformation as enhancing the organization's agility.

The negative correlation between Gender and DT2 (-.021) demonstrates a certain pragmatism of male respondents who consider the digital transformation is a factor that, together with other elements, can contribute to sustainable development.

The most significant correlation between the variable Gender and the items of the variable DT is negative and is between Gender and DT3 (-.166), which suggests that the organization's vision and mission must be at least one step ahead of the digital transformation strategy. Thus, vision and mission must be the key components that determine the particularities of the digital strategy and not the other way around.

Table 3. Variables Correlations

		Gender	Age	DT1	DT2	DT3	DT4
Gender	Pearson Correlation	1	-.132	.050	-.021	-.166*	.017
	Sig. (2-tailed)		.073	.500	.781	.024	.823
	N	185	185	185	185	185	185
Age	Pearson Correlation	-.132	1	.059	.126	.115	-.084
	Sig. (2-tailed)	.073		.422	.086	.118	.256
	N	185	185	185	185	185	185
DT1	Pearson Correlation	.050	.059	1	.472**	.474**	.358**
	Sig. (2-tailed)	.500	.422		.000	.000	.000
	N	185	185	185	185	185	185
DT2	Pearson Correlation	-.021	.126	.472**	1	.507**	.437**
	Sig. (2-tailed)	.781	.086	.000		.000	.000
	N	185	185	185	185	185	185
DT3	Pearson Correlation	-.166*	.115	.474**	.507**	1	.545**
	Sig. (2-tailed)	.024	.118	.000	.000		.000
	N	185	185	185	185	185	185
DT4	Pearson Correlation	.017	-.084	.358**	.437**	.545**	1
	Sig. (2-tailed)	.823	.256	.000	.000	.000	
	N	185	185	185	185	185	185

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS

The correlations between the Age variable and the items of the DT variable are predominantly positive, which demonstrates that **hypothesis 2 is partially validated**.

The only negative correlation was registered between Age and DT4 (-.084), which shows that the age of the respondents influences how the relationship between the digital transformation and the agility of the organization is perceived, some of the respondents being more reluctant to change.

The highest positive correlations were registered between Age and DT2 (.126), which proves that age influences how digital transformation is perceived as an element of sustainable development.

The age of employees also positively influences how the digital strategy supports the vision and mission of the organization (.115) to respond to the changes imposed by new technologies (.059), especially in the current conditions generated by the COVID-19 pandemic.

The correlations between the items of the DT variable are strong and positive, the strongest being between DT3 and DT4 (.545 **), emphasizing the systemic relationship between digital strategy, agility, vision, and mission of the organization.

Another strong positive correlation was registered between DT2 and DT3 (.507 **), which demonstrates that the bases of sustainable development are represented by a well-founded vision and mission that have the digital component in their content as a vital ingredient.

The correlation between DT1 and DT 3 (.474 **) and that between DT1 and DT2 (.472 **) connects the need to develop and implement a digital strategy with the organization's mission and vision with sustainable development.

External phenomena with strong disruptive consequences can accelerate awareness of the need to develop and implement digital strategies (Burlea-Schiopoiu & Burdescu, 2017). A more than eloquent example is the crisis caused by the COVID-19 pandemic, which revealed the importance

of digital capabilities. However, these episodes can act as barriers to digital transformation because the organization is not mature enough to support the implementation of the digitization strategy. In order to respond to external threats, traditional organizations may choose to develop their digital skills internally or focus on acquiring skills externally. To this end, organizations call on dynamic capabilities to review the allocation of resources, processes, and organizational culture needed to build their digital skills (Karimi & Walter, 2015) and review the technological foundations on which organizational strategy is built or reorient market segments (Rauch et al., 2016).

5. CONCLUSIONS

The conclusions of our research refer to the management mechanisms of the digital transformation process, mechanisms represented mainly by the vision and mission of the organization. Thus, it is confirmed that all organizations are, even if at different levels, affected by changes induced by new technologies and cannot avoid the digitization process, especially in the current conditions when teleworking is ubiquitous.

Therefore, organizations initiate a digital transformation process in response to the disruption of the economic and social environment. This digital transformation process is triggered by organizations out of the desire not to lose the competitive advantage gained before the pandemic outbreak.

Our analysis shows that digital transformation is a global and complex process, which can have consequences on the innovation of the business model or the organization's identity, an identity represented by its vision and mission. DT's success is conditioned by a multitude of factors: organizational capabilities, organizational culture, financial, technological, or human resources, internal processes, and last but not least, strategy alignment. The organizational capabilities required by an unstable and dynamic environment are significantly different from those required in an ecosystem characterized by predictability. The insufficiency of any of these elements acts as a barrier to the transformation process.

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