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## To cite this version:

David Poza, Adolfo López-Paredes, José M. González-Varona, Fernando Acebes. Fostering Digital Growth in SMEs: Organizational Competence for Digital Transformation. 21th Working Conference on Virtual Enterprises (PRO-VE), Nov 2020, Valencia, Spain. pp.237-248, 10.1007/978-3-030-62412-5_20 . hal-03745801

**HAL Id: hal-03745801**

**https://inria.hal.science/hal-03745801v1**

Submitted on 4 Aug 2022

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# Fostering Digital Growth in SMEs: Organizational Competence for Digital Transformation

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**Abstract.** Digital transformation has become a necessity for SMEs if they want to compete in an increasingly globalized market. The proposed maturity models are not really useful for moving forward, as they have been developed for large companies and are not adapted to the particularities of SMEs. We propose an alternative approach based on individual and organizational skills and capabilities. SMEs have digital transformation capabilities that could become a digital transformation competence. The paper aims to discuss these issues.

**Keywords:** Digital Transformation, Organizational Competence, SME.

## 1 Introduction

In recent years, the integration and exploitation of new digital technologies has become one of the greatest challenges faced by organizations. No organization is immune to their effects and their future performance will depend on the success of their assimilation [1]–[4]. They have the capacity to transform the products, services, operations, and even the business models of organizations, as well as their competitive environment [2], [5]–[8]. The integration of these technologies is generating an unprecedented and progressive digitalization that encourages innovation and transformation of organizations [3], [9]. It will be necessary to develop a new portfolio of digital transformation capabilities that allows organizations flexibility and responsiveness to the rapid changes required to generate new value propositions for customers and transform operating models [10]. This is especially important since there are many examples throughout the history of organizations that failed in technological advance by focusing their efforts on technologies without investing in organizational capabilities that guarantee their impact [1].

Currently digital technologies are no longer reserved for large companies, but also available to small and medium-sized enterprises (SMEs). SMEs have their own characteristics that make them different from large companies. They have more limited resources and specialization capabilities limited by their size. But SMEs have advantages like a simpler hierarchy level that allows faster decision-making [11].

While the digital transformation (DT) of businesses affects both large and small companies, SMEs are of particular interest in this regard because of their important role in the economy [12], representing more than 99 percent of companies in the European Union [13].

Preparing for digital transformation is not an easy task, it is necessary to develop digital capacities in which the activities, people, culture and structure of the organization are synchronized and aligned with a set of organizational objectives [14].

In this context, we will carry out a review and analysis of the existing literature on DT and organizational competence to understand their relationship and mutual influence; identifying the most relevant digital capabilities to promote the digital transformation of SMEs, we study those research questions:

RQ1 - Can digital transformation capabilities become an organizational competence for digital transformation (OCDT)?

RQ2 - If so, what are the most significant dimensions that would form part of the organizational competence for the digital transformation of SMEs?

The rest of the document has been organized as follows: in section 2, we address the theoretical framework of DT and organizational competence. In section 3, we describe the research work, detailing the process of data collection and analysis. In section 4, we present the results of the study, and we conclude by presenting in sections 5 and 6 results and the main conclusions in relation to the two issues that are the object of this research work.

## 2 Conceptual Framework Development

### 2.1 Digital Transformation in SMEs

DT is increasingly becoming the generally accepted medium for achieving organizational goals, including transformations of key business operations that affect the organization's products and processes, as well as its structure and concepts of business [2]. In this sense, DT involves the reinvention of the company, as well as the markets and industries in which it operates. A broad definition of DT, is the integration of digital technologies and business processes in a digital economy [15]. Another wide-ranging definition is the one that considers DT as the use of technology to radically improve the performance or reach of organizations [16]. According to this evolution Vial[17] proposes a definition of DT as *"a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies"*. The result of the transformation is a conscious and sustainable change in business performance [18].

### 2.2 Organizational Competence

In 1990 C. K. Prahalad and Gary Hamel [19] first introduced the concept of core competence in their article "The Core Competence of the Corporation" and defined it as *"collective learning in the organization, especially how to coordinate various*

*production skills and integrate multiple systems of technologies"*. A core competence is a harmonized combination of multiple resources and skills that differentiates the organization in the marketplace and therefore forms the basis of the organization's competitiveness. It would be of interest for the future advancement of OCDT's knowledge of SMEs to investigate whether it can become part of the organization's core competence and thus form the basis of the company's competitiveness. During the first years of the 90s, researchers made efforts to define the competencies of organizations, indicating as key elements of competence the abilities, capacities, knowledge, learning, coordination, organization and relationships [19]–[21].

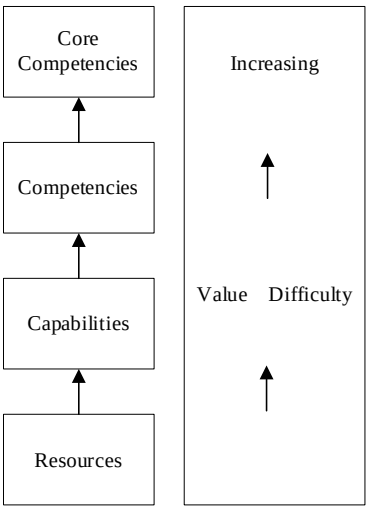


**Fig. 1.** Hierarchy of competencies.
Source: Mansour Javidan

Aaker [22] classifies the production factors of an organization as Assets and Capabilities; Assets are properties that the organization has and are used to generate income. Capabilities are the knowledge, skills, methods, techniques, procedures, processes, and routines used to implement, operate, and coordinate the assets and resources of an organization [23], [24]. Finally, they define “Skills” as special forms of capacity, generally of individuals or teams that are used in special situations or are related to the use of a special asset [25].

We can define organizational competence as *"the ability to maintain the coordinated deployment of assets in a way that helps a company achieve its objectives"* [26]. It is an integrated group of specific assets that includes individuals and groups that can perform distinctive activities that constitute organizational routines/processes [27]. Javidan [28] defined the concepts of core competence, competencies, capabilities and organizational resources to create a universal understanding of these concepts. Several authors propose several models for the development of organizational competences [26], [29], [30] but we have chosen the model proposed by Mansour Javidan for its simplicity and ease of application in SMEs; in addition to its high use by other authors, with a large number of bibliographic citations.

All organizations have their DT capabilities, skills to exploit their DT resources. They are business processes and routines that manage the interaction between the organization's resources, capabilities have a functional basis. But this does not mean that they will become competencies and even become part of the core competence of the organization.

For a SME digital capacity refers to the organization's willingness to push the digital agenda and become a digital company [31]. SMEs develop digital capabilities is a prerequisite to start and advance towards digital maturity, and therefore it is important to know what are the key dimensions of digital capabilities, how they can be measured and used to support a digital business model [32].

## 3. Research Design

The research has included a review of the relevant scientific literature and development of a proposed DT competence model, based on the results obtained in case studies and relevant scientific literature models (Figure 1). The stages of model development include the identification of relevant organizational capabilities and skills to develop a DT competence model in SMEs and its grouping into relevant dimensions. Initially we identified the bibliographic databases that best met the requirements of the study. We decided to use the Elsevier Scopus and Web of Science (WoS) databases in combination. These databases are considered benchmarks for demonstrating the quality of scientific publications. WoS and Scopus are the most widespread databases in different scientific fields, and the most frequently used to search scientific literature [33]. The search focused on journal articles and reviews. Therefore, only 'finished' peer-reviewed articles in indexed academic journals were included, professional journals were also excluded. In addition, the search was limited to articles written in English.

The study began by collecting data using a Boolean keyword search of articles in the WoS main collection and Scopus. The descriptors used were "enabler*", "driver*" or "capabilit*" and "digital transformation" and "firm*", "compan*" or "SME*". This search identified 75 papers in WoS and 76 in Scopus that met the established requirements. Those duplicate papers in both databases were eliminated, resulting in a total of 111 different papers that served as the basis for the research. The relevant papers were selected for their content and subject matter by a preliminary reading of the abstract and introduction of all of them, resulting in 39 irrelevant to the research and a total of 72 relevant to our research.

**Table 1.** Research design

| Data criteria identification | | | | |
|---|---|---|---|---|
| Data base | WoS, Scopus | | Time Spam | All years |
| Doc. Types | Academic papers (articles and reviews)<br>Written in English | | | |
| Search | STEP 1<br>- WoS and Scopus Boolean search within title, abstract and keywords<br>- With the descriptors ("enabler*" or "driver*" or "capabilit*") AND "digital transformation" AND ("firm*" OR "compan*" OR "SME*")<br>- 75 articles founded in WoS<br>- 76 articles founded in Scopus<br><br>STEP 2<br>- All articles were then reviewed and duplicates were removed.<br>- WoS and Scopus review showed 72 different papers<br>- New search [("enabler*" or "driver*" or "capabil*") and "digital*" and ("estrateg*" or "alignment*")] categories "management" and "Business" and "engineering" and "economics"<br>=> Additional 177 articles found | | | |
| Final corpus | Corpus of 90 scholarly documents identified publishes between 2003 and 2020 | | | |

Papers identified as relevant were read in full, focusing on the consideration of drivers for DT, as well as the role of drivers for the development of organizational competence. From the reading made, we identified the need for a new additional search, focusing on the keywords detected and not used in the initial search and limiting the search categories to "management", "business", "engineering" and "economics". The search terms used were "enabler*", "driver*" or "capabilit*" and "digital*" and "estrateg*" or "alignment*". This search identified 56 papers in WoS and 121 in Scopus that met the established requirements. All of them were reviewed

by eliminating those that were not relevant to the object of study or that were duplicated, resulting in a total of 18 additional documents in the new search. The final corpus covers a period of time between 2003 and 2020.

## 4. Findings: Organizational Competence Model for Digital Transformation

We conducted an in-depth analysis of the papers to determine how the authors describe the enablers for advancing the digitalization of companies. In this process, the selected papers were used to identify which are the most important digital enablers that allow the development of the necessary capabilities for the development an OCDT, their characteristics and the dimensions that group them. SME´s DT is twofold, from an external perspective it affects the relationship with suppliers, competitors, customers and other external stakeholders, and from an internal perspective it affects managers and employees who make decisions on the adoption of new digital technologies, the structure of the company and the way work is done and organized [17]. It is a simultaneous process, internal to the company and external to a wider ecosystem [34]. In our research we will focus on the internal perspective, developing the concept of OCDT. The OCDT model can help SMEs to know their level of digital transformation and therefore establish collaboration models between SMEs with similar levels of digital transformation.

The developed model follows the hierarchy of competencies of Javidan [28] and consists of 5 dimensions or capabilities for the development of a competency that together include the factors that allow success in the DT. These factors are called elements of competence and are made up of the physical, human and organizational resources available to the SME.

### 4.1 Governance

Governance is needed at all levels of the organization. In a context of uncertainty, complexity and rapid change, it must be aligned with DT [12] and the redesign of flexible and manageable governance structures to ensure flexibility and control in the SME [29]. Advancing DT will require innovations in SME management, such as building new digital governance capabilities to digitally transform internal collaborative approaches [35], [36].

#### 4.1.1 Vision and Strategy

An OCDT must be specifically aligned with the vision, mission and strategy of the organization. One of the most important decisions to be made by the SME is to establish a common and clear vision throughout the organization, to inform the direction to be taken by all stakeholders and thus ensure the future success of the TD, many authors emphasize this statement [37]–[39]. In addition, the decisions to be made by management will include how the vision will be established and communicated to the rest of the organization. Adopting a clear digital strategy is key to advancing DT [34]. DT strategy is a plan that helps companies to govern the

transformations that arise from the integration of digital technologies, as well as in their operations after a transformation [40].

#### 4.1.2 Leadership

One of the main challenges facing SME leaders is how to optimally integrate business systems and digital technologies into their organizations to maximize their potential [41]. Leaders most likely to succeed will be those who are able to effectively align the business and digital strategy of SMEs [42]. Knowledge sharing and innovation needed to advance DT are effectively stimulated through transformational employee leadership [43]. Leading in a digital economy is about creating the conditions for success, inspiring and engaging people as members of a community of leaders so that everyone can contribute their efforts to achieving the goals set. Building a community of leaders is based on four components: increasing customer value, serving a higher purpose, strengthening connectivity and fostering creativity and continuous innovation [44].

#### 4.1.3 Ambidexterity

Ambidexterity combines two different conceptions of organizational orientation and performance [45], [46]. On the one hand, exploitation focuses on current internal knowledge, capabilities and decision making to maximize short-term performance. On the other hand, exploration, which focuses on learning new knowledge, discovering new capabilities and investigating new ways of doing business, is related to long-term results. The combination of exploitation and exploration activities affects the generation of knowledge and innovation in SMEs [47]–[49].

### 4.2 Organizational Alignment

The adoption and integration of new digital technologies in SMEs will influence various business activities, including business models, as new forms of cooperation between companies, new products and services, and changes in the relationship with employees, customers, suppliers and other stakeholders. These changes are also forcing companies to rethink their strategy and look for new business opportunities [14], [50]–[52]. New operations will be necessary when different technologies are integrated and new ways of creating value will require changes in the organizational configuration, mainly in those digital activities incorporated into the organizational structure; products, processes, or skills will be affected by the changes. DT deployment will require an alignment of four elements of competence: use of technologies, changes in value creation, structural changes and financial aspects [40].

Although SMEs financial resources are limited, they will have to make an effort to redirect their financial investments to support the DT, in accordance with their strategic vision [53]. Agility is essential for SMEs to respond quickly to environmental changes and leverage opportunities advantage, allowing them to implement strategic changes in their structures, processes, products and services to adapt, survive and gain competitive advantage from change [54]–[57]. As noted above, SMEs have inherent characteristics that place them at an initial disadvantage

with respect to large companies, although some studies also point to some advantages in terms of achieving agility. SMEs that have achieved agility have higher profit margins than larger companies, due to the lower cost of transforming their business model [58]. In addition, SMEs are highly influenced by the manager's mentality in order to advance in digitalization and agility, so when managers can articulate their strategies and broaden their viewpoints, they are more open to innovations and changes in processes that generate better performance [59]. Finally, SMEs could take advantage of their external relations to overcome the constraints related to their small size and have access to resources and capabilities not available internally [60]–[62], such as new opportunities, financial resources, human and technical resources.

### 4.3 Culture

All SMEs develop their own corporate culture by integrating the visions, values and beliefs shared by all the people involved. Companies have to develop digital capabilities where the culture of a company is synchronized and aligned with the organizational objectives. Companies that mature digitally have organizational cultures that share common characteristics; a greater appetite for risk, rapid experimentation, strong investment in talent and the development of leaders with "soft" skills [14]. Companies at the forefront of their digital transformation have made risk taking like a cultural norm. Development of high performance culture, sustainable over time, that allows leadership based on the values and capacities of the organization, will be of great importance to face the important current challenges [63].

### 4.4 Technology

SMEs are continuously faced with the decision of selecting the technologies to be incorporated. Determining the most appropriate options is difficult because the number and complexity of available technologies is constantly increasing. However, selecting the right technologies can create significant competitive advantages for an enterprise in a complex business environment. Digital technologies enable the development of new or improved products and services delivered to customers more efficiently. These technologies also enable fundamentally new ways of organizing business [64]. The ability to conceptualize how digital technologies may affect the business model is a missing skill in firms in DT early stage [1]. The use of technology is revealed as one of the key technological skills to be developed in order to advance in DT. Technologies integration to transform the business model and companies operation will determine the success of the DT. The history of technological advancement in business is full of examples of companies that failed to implement because they did not invest in organizational capabilities to ensure impact [1]. The use of technology can develop superior technological capabilities that allow for greater agility in responding to changes in the context in which organizations operate [65], [66].

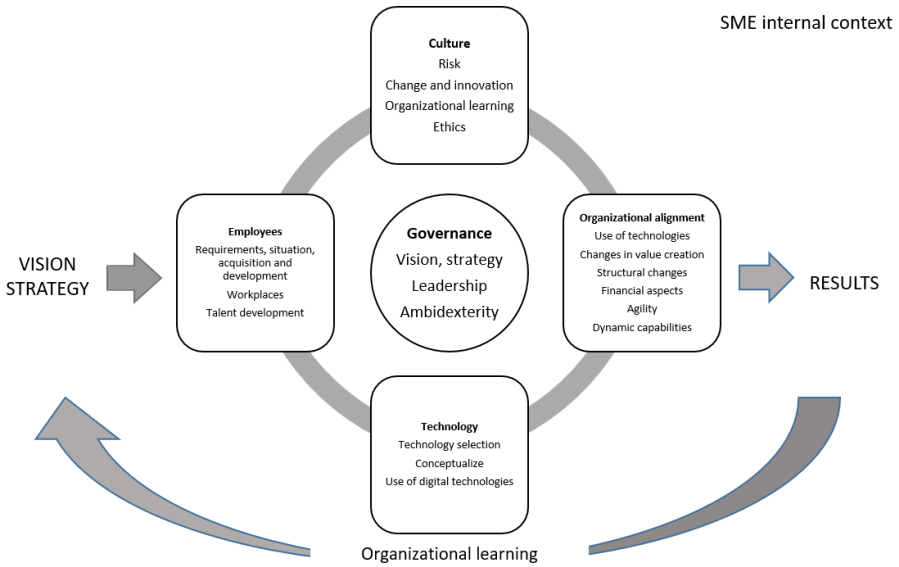


**Fig. 2.** Organizational Competence for Digital Transformation (OCDT)

### 4.5 Employees

This group includes the personal skills needed in SMEs to develop an OCDT, related to the general objectives of management and their expectations about personal competencies. The DT is carried out by people, to fulfil the vision, mission and strategy of the SME. An essential capability is to train employees for networking, which requires appropriate skills and guidelines based on values rather than rigid rules [10]. Fostering social networking among employees is also important, e.g. by participating in online communities, where the involvement of managers is desirable, new insights can emerge and facilitate innovation and business growth. What differentiates DT from other fields of study is that knowledge acquired by employees is used to improve decision-making skills. DT requires employees to rethink old processes and re-imagine new processes and decisions [67].

## 6. Conclusion

According to the research carried out, we can answer our research questions in the affirmative. We can develop an OCDT that allows SMEs to be more competitive and better suited to their characteristics. This OCDT model is based on five dimensions, each of which will require the development of digital capabilities. In future researchs we will delve into the relationships between the elements of competence and their influence on the competitiveness of SMEs.

SMEs usually face DT in a different situation than large companies, they are usually less formal and have a smaller organizational structure, they are smaller in

size and operate on a smaller scale, and their resources to deal with DT are less [59], [68], [69]. Thus, although they have some advantage over large companies, they usually start out with a disadvantage, which remains over time. DT is a relatively new phenomenon and the end state of a digitally mature organization is not yet clearly defined [1]. The current maturity models have been developed for large companies and their usefulness for SMEs is limited, a different approach would be required using an individual and organizational competence-based approach. The Organizational Competence of Digital Transformation (OCDT) model presented in this paper will help the DT of SMEs with the aim of generating competitive advantages and allowing SMEs to successfully adapt to the new competitive environment generated by digital technologies and characterized by innovation and constant change. A model based on organizational competencies can help SMEs to advance in their digital maturity [70] to refer to the ability to respond to change early way. This study allowed the development of an OCDT that can help SME identify and develop the DT capabilities to advance the DT of their business model.

This model takes into account the specific characteristics of SMEs and is better adapted than other models that allow advancing in digital maturity but were designed to be applied in large companies. In this sense, research results contribute to a better understanding of the role of organizational learning and its relationship to the formation and development of an OCDT. Furthermore, it allows to know which are the digital capabilities and skills that a SME has, to face DT and to plan the actions to be carried out to close detected gaps. In future researchs, we will use other descriptors like the term "organi*" in order to obtain a broader coverage than "compan*".

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