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# Evaluating enablers for digital transformation readiness and resulting benefits

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**Abstract**

Digital transformation (DT) readiness is usually associated with the technological maturity of an organisation more than with its readiness from a strategic point of view, which makes it essential to have artefacts that allow this type of evaluation, which still needs to be sufficiently expanded and tested. Based on Rogers's [1] framework, this work developed a conceptual model to assess the impact and relevance of the six enablers in strategic readiness and benefits resulting from a DT project. Through a qualitative study with a panel of experts from six Portuguese organisations, it was possible to validate the model, conclude which are the most relevant strategic enablers for greater DT readiness, and also that conducting more business through digital platforms significantly improves the resulting benefits. Furthermore, it will be possible to apply this model in broader quantitative contexts to determine which factors are most prevalent according to the context, be it an industry, a region, or an organisation's dimension.



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## 1. Introduction

Today, organisations need to develop strategies that guide the organisation through the DT process to get a better and more sustainable performance [2]. DT's importance is mainly attributed to the positive impacts that it has in terms of increased revenues and productivity gains. Still, these are dependent on the execution of a well-defined strategy for the implementation of this transformation [3], [4].

Regarding DT strategy, literature refers to the framework developed by Rogers [1] that highlights six enablers that help an organisation measure its readiness for this transformation to have sustainable growth. These enablers involve how the organisation handles the relationships with its customers and competitors, the management of data and innovation, how it creates value, and finally, what is its organisational agility for the transformation.

However, not only are there several variables for which it is necessary to determine the individual level of influence in the readiness for the transformation, but also to understand which are the ones that can best contribute to facilitating the prioritisation of implementation, which is the problem that this research seeks to answer, through the validation of an artefact that companies can use to determine their degree of readiness and what they need to do to increase it.

Based on the work of Rogers [1] and departing from its self-evaluation questionnaire for the assessment of DT readiness, a conceptual model supported by previous academic research was developed to answer the research question "How do the six strategic and organisational enablers proposed by Rogers [1] impact the level of readiness and benefits of digital transformation?". We validate and assess the model through a qualitative method involving interviews with six experts, with the objectives of evaluating which strategic aspects can be most relevant to implementing a successful DT, and the potential benefits to obtain.

## 2. Literature Review

### *2.1 Digital transformation strategic and organisational enablers*

Grounding in the DT definition of Hess et al. [5] and departing from Rogers [1] framework to understand the relevance of factors that influence the six enablers of DT readiness, we follow with the presentation of these six enablers, that support a proposed conceptual model.

**Customer centricity** means that the organisation will integrate technologies so that customers can, for example, use mobile technologies in their interactions, with a more personalized experience when shopping, or encourage customer sharing of ideas and information [6], providing a service and experience of excellence, becoming an advocate for the organisation, which will bring benefits to its brand and reputation. To this end, it is also essential that employees focus on improving their relationship with the customer [7].

**Competitive positioning** as a DT enabler relates to the possibility of implementing, or being present, on digital platforms, which are commercial networks where different entities, such as various organisations with similar or complementary products or services, can interact with customers and collaborate to gain benefits such as creating value and reducing transaction and distribution costs [8]. These have transformed businesses in various sectors [9], as we can see with examples such as Google, Amazon or Airbnb, and its implementation is an effective growth strategy and imperative for an organisation going through DT [4].

**Data management** reveals if an organisation has a data-driven strategy, where data assumes a crucial role in the decision-making processes at all levels of employees since the insights from the data gathered are used to support more informed decision-making, resulting in better overall decisions [10]. The organisation needs to coach and empower its employees to use the evidence from its data to make decisions. Data must be stored in a data warehouse where it is saved, aggregated, structured, and constantly improved and built upon [11].

**Innovation process** is a critical enabler to take all advantage of a DT strategy where all the employees are seen with the potential to bring innovative solutions to the organisation [12]. Organisations with a digital strategy have a different approach to innovation through a continuous improvement methodology and encourage innovation through experimentation, a practice used by some of the biggest companies in the world, such as Google and Amazon [13].

**Value creation** focuses on customer needs, and DT can enable it in new and unprecedented ways, as it is not only about selling a product or service but also about the whole experience, from the pre-purchase to after the purchase [14]. With rapid changes in the market, it becomes essential for an organisation to be able to reshape its value propositions and stay ahead of the curve, which means that the organisation needs to identify the technologies that will allow it to exploit all opportunities to create value for the customers [15].

**Organisational agility** is the ability of an organisation to respond fast to changes in the environment, which means that it can respond rapidly to changing customers' needs [16], with management continuously looking for new innovative ideas. Management is also concerned with the strategic alignment between business and IT [17], developing and monitoring business metrics that ensure it can achieve its long-term objectives [18].

### *2.2 Digital transformation readiness*

Readiness is an crucial prerequisite where an organisation evaluates if it is prepared to make changes and develop practices [19]. Making a parallel between DT and organisational changes, the work of Holt et al. [20] proposed a readiness model with five main factors that he later reduced to four: appropriateness, management support, change efficacy, and personal benefits [20]. The appropriateness factor is about evaluating if the change is needed for the organisation to become more efficient, if it will be important in the long term, if the change is a priority, and if it will make the employees´ jobs simpler or more complicated. Regarding management support, it is about the need for the managers to fully support the change, be motivated by that change, and convey that motivation to all the employees across the organisation. The change efficacy is about ensuring that the organisation has prepared its employees to have the skills and the will to learn and are comfortable doing their work after the change occurs. Finally, the personal benefits of the change mean that it is important that the employees feel that their value for the organisation will remain the same with this change.

Recently, other authors [21] also emphasised the importance of the readiness factor for the whole organisation to integrate digital technologies and guide the change process that the transformation will bring, taking into account the environment in which it operates.

### *2.3 The benefits of digital transformation*

More than typical benefits, such as improvement in revenues and customer satisfaction, are needed, and other metrics are required to better understand the benefits of this transformation [22], [23]. For instance, Yucel [22] presents a list of benefits differentiated between the ones that are intangible and hard to measure and those that are tangible and easy to measure. The last ones can be more related to the organisation's profits, such as the percentage of revenue that the organisation can get through the new digital channels, products or services, the increase in market share, or the productivity gains from reductions in time to market new products and services, as well as on transactions, orders, and deliveries. Also, benefits such as the development and launch of new products and services, by implementing new innovative ideas in the organisation, or the benefits related to the customer relationship, such as the increase in customer engagement through the new digital channels or the rate of new customer acquisition.

Along the same line, Căpușneanu et al. [3], proposed four main benefits of DT: improved productivity that will lead to more efficiency and cost reductions; increased agility, allowing an organisation to be able to innovate faster and introduce faster new products and services in new markets; increased profits, through an increase of revenues and market share, that gives the organisation an advantage over its competitors; and, digital culture encouragement, that can bring to the organisation a motivation to continuously keep improving, learning and adapting to new disruptive technologies.

## 3. Model and method

Departing from Rogers [1] framework previously discussed, the conceptual model represented in Figure 1 aims to assess the relative degree of impact of the enablers in DT readiness and, consequently, in the benefits for the organisation.

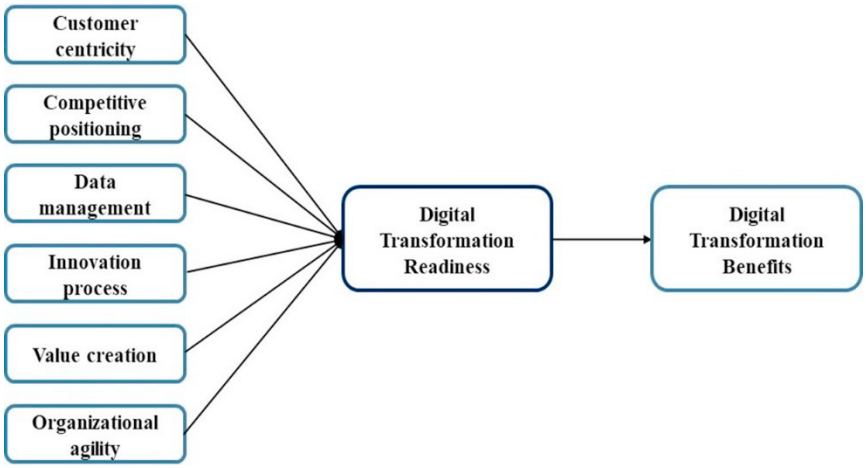


Fig. 1. Conceptual model.

DT readiness tackles the top management commitment, the ability of the employees with the new processes, the level of digitization and strategic guidance, supported by Sony et Naik [21], Holt [20] and previous work [24]. And regarding the benefits of DT, following Yucel [22] and Căpușneanu et al. [3], this work considered the increase in profits, the improvement in productivity in the day-to-day activities of the organisation, the improvement of market share, and the increase of new customers.

This work followed a design science research methodology [25], where the artefact, corresponding to the conceptual model, was submitted as a demonstration through interviews with six experts from organisations based in Portugal that have already begun the process of DT. Their position as managers and board members was of utmost importance due to the relevance of the answers to questions of management and strategic nature related with the DT implementation, and the sample is detailed on Table 1 below.

Table 1. Sample of respondents.

| Expert | Expert Role | Organisation Industry |
|---|---|---|
| Expert 1 | Chairman of Board of Directors | Banking |
| Expert 2 | Board member | Technology |
| Expert 3 | Strategic Marketing Director | Insurance |
| Expert 4 | IT applications Manager | Agroindustrial |
| Expert 5 | Board member | Information Technologies |
| Expert 6 | Regional Office Manager | Insurance company |

The questions are statements based on the items of the conceptual model, which have been valued on a Likert scale of one to five, where one means that the expert completely disagrees with the statement and five means that the expert completely agrees.

## 4. Results

The results from this qualitative study, regarding six organisations undertaking DT projects, were taken to get average results by item and the average by each enabler, presented in Appendix A.

Four of the six enablers are considered most relevant for DT readiness, according to these experts – Customer centricity, Innovation process, Value creation, and Organisational agility. The other two - Competitive positioning and Data management, were poorly classified. Collaboration with competing organisations does not seem to be an essential aspect for these organisations, which do not find value in trading information and new innovative ideas with competitors. On the other hand, a data strategy that involves coaching and trusting employees across the organisation with valuable data [10] might not be considered a priority because, in this sample, a significant part of the organisations

represented is dealing with very sensible data (personal and financial data), where data privacy needs to be carefully handled and placed above the business interests of the organisation [26].

Table 2 summarises the average by enabler for each respondent, allowing us to discuss the results further.

Table 2. Average results by enabler for each respondent.

| Enabler | Expert 1 | Expert 2 | Expert 3 | Expert 4 | Expert 5 | Expert 6 |
|---|---|---|---|---|---|---|
| Innovation process | 4.3 | 5 | 3 | 4.3 | 5 | 5 |
| Customer centricity | 4.5 | 4.8 | 3.3 | 3.8 | 5 | 4.8 |
| Value creation | 4.5 | 4.5 | 3 | 4.8 | 3.8 | 4.8 |
| Organisational agility | 4.7 | 4.6 | 3 | 4.1 | 3.6 | 4.9 |
| Competitive positioning | 3 | 4 | 2.7 | 3.7 | 4 | 2.3 |
| Data management | 3.7 | 4 | 3.3 | 3 | 4 | 1.7 |
| *Enabler average* | *4.1* | *4.5* | *3.1* | *4* | *4.2* | *3.9* |
| DT Readiness | 3.8 | 4.5 | 2.5 | 3.3 | 4.3 | 5 |
| DT Benefits | 5 | 4.5 | 4 | 3.3 | 5 | 3.8 |

We can verify that the results from Experts 2 and 6 also give higher values of DT Readiness, and the opposite is also true when we analyse the results of Expert 3.

Among the six respondents, whether they achieved more maturity in these six enablers or not, or are more ready for DT or not, they all considered that since starting DT they had productivity increases, and most have improved their profits, market share, and the number of new clients.

It is important to keep in mind that DT is a process of significant changes across the organisation [2], [24], so there are items in this model with low results which are also a consequence of DT being a complex process [5], [27], in which not all the necessary changes occur at once. For example, some of the organisations involved in this work admitted being working towards improving in some of the areas that they attributed a low score, such as conducting business through digital platforms or having data more accessible across the organisation to assist in the decision-making process, or even having the ability to provide the customer with the best and most complete experience [28].

## 5. Conclusions

Grounded in the six enablers proposed by Rogers [1] to establish the strategic readiness for a successful DT, the research results obtained with the evaluation of the artefact made by the six experts allow us to conclude that four stand out as the most impactful enablers: Customer-Centricity, Innovation Process, Value Creation, and Organisational Agility , which makes more explicit the level of influence in the readiness for the transformation and which ones can best contribute to facilitating the prioritisation of DT implementation.

Some practical implications of this work are the demonstration that the focus of the six experts on those four enablers shows that the ones ranking better in those enablers also demonstrate better DT readiness. Additionally, from the point of view of the DT generated benefits, having a higher level of DT readiness makes it more likely to improve those benefits, and it can also be concluded that organisations conducting more business through digital platforms have improved those benefits.

So, the usage of the artefact can be of significant relevance for organisations that want to determine their degree of DT readiness; what they need to do to increase it; which strategic aspects can be most relevant to implementing a successful DT, and the potential benefits to obtaining.

This work is limited by the context and the number of interviews conducted, as it was submitted only to experts based on the same geography and in a limited number (six interviews). Future works could be quantitative research using the same model, and other possibilities include studying organisations from a specific industry.

## Appendix A. Average results, per item and enabler

| Lever, References, Lever average | Item Description | Item Average |
|---|---|---|
| **Customer centricity** [1], [6], [7] **4.34** | Mobile technologies positively influence customer's purchase intent | 4.50 |
| | Implement customer's suggestions, perceptions, and inputs on prod/services | 4.17 |
| | Customers influence brand and reputation | 4.50 |
| | Train employees to better deal with customers | 4.17 |
| **Competitive positioning** [1], [9] **3.28** | Share ideas with competitors | 1.67 |
| | Implement digital platforms | 3.50 |
| | Digital transformation allows the organisation to compete in new markets | 4.67 |
| **Data management** [1], [10], [11] **3.28** | Transform data into value | 3.83 |
| | Store, aggregate and structure data | 3.83 |
| | Data, organized, accessible to everyone across the org. For decisions support | 2.17 |
| **Innovation process** [1], [12], [13] **4.45** | Innovation occurs through experimentation and testing of new ideas | 4.17 |
| | Continuous process for products, services, processes constant improvement | 4.50 |
| | Every employee has the potential to innovate | 4.67 |
| **Value Creation** [1], [14], [15] **4.21** | Value creation focuses on the customer´s needs | 4.67 |
| | Prioritize the technologies that create more value for the customer | 4.17 |
| | Reshape value propositions to stay ahead of the curve | 3.33 |
| | For the customer from the pre-purchase stage to the post-purchase | 4.67 |
| **Organisational Agility** [1], [16]–[18] **4.14** | Integrate digital technology and business strategy to attain strategic alignment | 4.50 |
| | Explore new opportunities while exploiting current value propositions | 4.00 |
| | Business metrics are reviewed and refined | 4.33 |
| | Managers focus on the long-term view | 4.50 |
| | We continuously search for forms to reinvent or redesign our organisation | 4.00 |
| | Management actively seeks new innovative ideas | 4.17 |
| | We can respond rapidly to the customers' needs | 3.50 |
| **Digital Transformation Readiness** [20], [21] **3.88** | Top decision-makers have put all their support behind the change effort | 4.83 |
| | The employees have the ability to handle the new tasks | 3.17 |
| | The organisation possesses a high level of digitization | 3.67 |
| | The organisation has a developed strategy to guide the digital transformation | 3.83 |
| **Digital Transformation Benefits** [3], [22] **4.25** | Does your management agree that DT/right technology.. | |
| | ..makes org. +efficient, profitable by increasing revenue faster than competitors | 4.00 |
| | ..automate manual tasks, integrate data, stream workflow, improve productivity | 4.33 |
| | ..helps the organisation improve its market share | 4.33 |
| | ..helps the organisation get new clients | 4.33 |

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