

Article

Understanding How Business Transformation Processes Are Driven: A Business Agility Model

Alonso Alvarez and Borja Bordel * 

Department of Computer Systems, Universidad Politécnica de Madrid, 28031 Madrid, Spain;
alonso.alvarez@alumnos.upm.es

* Correspondence: borja.bordel@upm.es

Abstract: Agile transformation processes are of critical importance in the contemporary business environment, as companies invest a significant amount of resources, time, and attention into achieve a state of business agility. These processes are complex, and companies lack reference roadmaps, guides, and even a common language to successfully achieve their goals. To assist organizations in these transformations, several business agility models have been proposed to help understanding where the transformation effort must be applied and where its effects will be manifested. However, there are numerous such transformations, which may be partial, and which reflect the author's beliefs and preferences, rather than necessarily aligning with the needs of organizations. Therefore, more comprehensive and general models are required. This paper addresses this challenge. Through a rigorous search and review process of the existing literature, 15 models were identified and used as a basis. After a process of analysis and refinement based on the completeness of business agility, the frequency with which their dimensions are mentioned in the models were analyzed, and the simplicity in the result was searched for, we propose a model based on nine dimensions. Each dimension describes where to focus the transformation process, plan the necessary actions, understand the results, and compare the process with other similar processes. The proposed model is comprehensive and highlights the dimensions most frequently mentioned in various cases and in the state of the art. It applies to the concept of completeness in business agility, covering the entire organization, instead of partial and biased views. This approach has been validated through a survey of participants in an ongoing study about agile transformations to increase the adaptability and sustainability of organizations. Our proposal has some known limitations, such as the criteria used in its elaboration, its granularity, and the equivalence of its dimensions with other models. As for its use, it is a tool, not a roadmap or a detailed transformation plan, and it has not yet been empirically validated.



Received: 25 November 2024

Revised: 10 March 2025

Accepted: 11 March 2025

Published: 31 March 2025

Citation: Alvarez, A., & Bordel, B. (2025). Understanding How Business Transformation Processes Are Driven: A Business Agility Model. *Administrative Sciences*, 15(4), 128. <https://doi.org/10.3390/admsci15040128>

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Keywords: business agility; agile; agile transformations; agile enterprises; adaptive organizations; adaptability; sustainable organizations

1. Introduction

The concept of agility was initially developed within the software industry with the objective of enhancing the efficiency of small teams engaged in software production by integrating principles derived from the manufacturing industry (Takeuchi & Nonaka, 1986). It was soon recognized that the optimal way to achieve the full benefits of agility was to extend this philosophy and practice to the entire organization (Denning, 2018). This extension is commonly referred to as business agility, enterprise agility, or organizational

agility. It is envisioned as an ideal state for organizations in which they can adapt in an agile (quick and flexible) way to a rapidly changing environment (Hesselberg, 2018).

Organizations implement what are known as “Agile Transformations” in order to achieve the state of business agility (Spayd & Madore, 2020). The process of agile transformation is of critical importance in the contemporary business environment, as companies invest a significant amount of resources, time, and attention in their pursuit of business agility (Denning, 2018).

Despite the effort invested, the industry estimates that between 47% (Odilov, 2024) and 70% (Robinson, 2019) of agile transformations fail. There are many reasons for this. For starters, the lack of a model is a common factor in many failed transformations (Kotter & Cohen, 2012). But specifically in the case of agile transformations, in addition to general reasons (culture, leadership, organizational structure) (Mundra, 2018), reasons related to the management of the transformation (how to measure it, how to define its scope, how to manage it, how to communicate it) (Barnard, 2024) are mentioned where having a model would help to properly manage the transformation process. In the course of their own research, the authors found such a need and discovered that several practitioners (Hesselberg, 2018; D. Rigby et al., 2020; Sidky et al., 2024) had developed their own solutions to this question. These models are frameworks that help organizations to understand the scope of a transformation to classify activities, metrics, or methods used.

A model in this context is a narrative, a simplification of reality (Taleb, 2012). Narratives help to deal with problems of a complex nature (Berger, 2019), and agile transformation processes fit this definition (Goh & Mundra, 2024). In this way, a model becomes a tool to reduce the risk of failure of an agile transformation.

The existence of models developed by professionals and organizations that develop their transformation processes used by other organizations as inspiration for their own processes, is a sign that there is a need that can be filled by the academic world.

However, despite the importance given to it in industry, these agile transformations have been studied little in academia (Grass et al., 2020; Abdul Wahab et al., 2024), despite the extensive “gray literature” produced by practitioners. For this reason, the authors conducted a study to gain insight into agile transformations from an academic perspective (Alvarez & Bordel, 2024). Specifically, they aimed to understand the objectives of organizations pursuing these processes, the factors contributing to their success, and the difficulties they encounter.

In preparing for the fieldwork (semi-structured workshops and interviews), we identified the need for a way to organize the topics to be addressed and to classify the answers to be collected. This is not new: other authors have highlighted the lack of tools to facilitate the development, control, and study of agile transformations (Carroll et al., 2023); in particular, the lack of a unified framework of reference to assist organizations undergoing agile transformations.

In our extensive research, we have found several models, most of them in non-academic or “gray” literature (like (Mundra, 2018; D. Rigby et al., 2020), or (Sidky et al., 2024)). These models, developed by practitioners from their own experience, consist of a list of areas or aspects that should be the focus of the transformation and also where its impact should be evaluated.

In addition, we identified an interest in the academic literature on the topic (Sommer, 2019). In addition, we have found that several studies on agility, agile frameworks, and agile transformations tend to group elements, such as the factors involved in the adoption of agility and business agility, in sets or series (Dikert et al., 2016; Verwijs & Russo, 2023; Gwangwadza & Hanslo, 2024; Späth & Westner, 2024). This shows that there is a need for a

tool that facilitates the analysis and management of information and processes related to agile transformations.

However, none of these models or sets can be considered as the reference tool that organizations need: either because they focus on very specific areas or because they leave out very relevant aspects. Therefore, we believe that there is a real gap: the lack of a comprehensive reference model to support agile transformation processes (Goh & Mundra, 2024), a model that would help manage these transformations and analyze their impact.

To address this issue, we have developed a unified model that serves as a common framework of reference in agile transformations. This model will help organizations in identifying the areas of focus for transformation and anticipating where they can expect the impact of the changes. These areas are what we call “dimensions”. This model will assist in classifying and measuring the impact of both transformation enablers and inhibitors.

In developing this model, we have drawn on existing literature, particularly gray literature from practitioner models. We have selected the elements that appear most frequently and those that help to provide a complete vision of the transformation. Given the comprehensive scope of business agility, we have used completeness as a guiding principle in the elaboration of our model.

The paper is organized as follows. Section 2 describes the creation of the proposed reference model, including how the identification of sources was conducted, the curation process, and the list of selected models. Section 3 introduces the new and proposed reference model, listing and describing the nine dimensions that compose it. Section 4 presents a study with users based on three research questions and workshops with real stakeholders. Section 5 concludes the paper and summarizes the findings and recommendations for future research. Two additional appendixes can be found at the end of the paper. One covers in detail the models analyzed. The other appendix provides a comprehensive overview of the dimensions of the model proposed.

Regarding the objectives of this work, there is a first implicit hypothesis: is it possible to create a unified reference model for agile transformations? This model is the one presented in Section 4. However, it is necessary to go further: the proposed synthesis model requires some kind of confirmation with stakeholders. Therefore, some research questions have been proposed to determine whether the model fulfills its main purpose of being useful for organizations developing an agile transformation:

RQ1: Do organizations demand business agility reference models to help them plan and execute their agile transformation processes? Addressed in Section 4.2.1.

RQ2: Is the nine-dimensional synthesis model more suitable for agile transformation than other currently available models? Response in Section 4.2.2.

RQ3: Is the nine-dimensional model adapted to the needs of the transformations? Discussed in Section 4.2.3.

The research contributions of this paper are as follows:

- Identify and analyze the various existing models for agile transformation;
- Provide a synthesis model that facilitates the management of agile transformation processes;
- Confirm this synthesis model based on the evaluation of participants in a study on agile transformation. The participants are practitioners from organizations that are undertaking their own transformation processes, or from organizations that are helping others to do so.

2. Creation of a Comprehensive Reference Model Based on the Literature Review

The first step in this process was to analyze the academic literature. As we will see, this source is not particularly extensive and it did not provide all the information

we were looking for, so we had to turn to other sources: the so-called “gray literature”, particularly books.

We then analyzed the content of this literature in order to identify the elements of the model that are the subject of this paper. A structured and organized view of the key dimensions of business agility is usually called a model. This is a fundamental tool in the implementation of agile transformation, as it indicates the focus of change.

Dimensions are areas or aspects where the focus of business agility is placed. Consequently, they provide a more comprehensive and operational understanding of the concept than the various definitions. This provides a framework for the identification and extraction process.

Finally, and in order to gather feedback on the model, it was presented to the participants in our study about agile transformation in addition to the different models analyzed. The feedback provided by the participants regarding the various models served as a form of confirmation.

2.1. Related Work

The first step was to search and to analyze references in the literature.

We have followed a simplified version of the PRISMA process (Page et al., 2021) (not every element of the PRISMA checklist is needed in our analysis). The steps are shown in Figure 1.

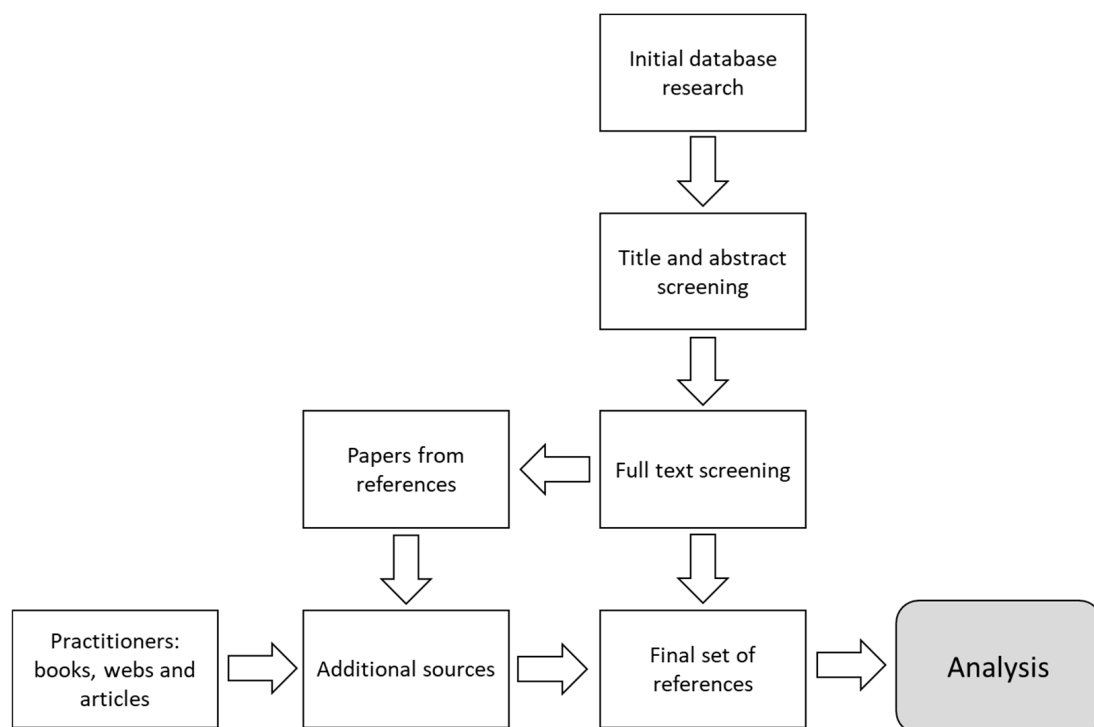


Figure 1. Steps followed to collect and analyze related work.

2.1.1. Academic Sources

When selecting sources for the literature review, we were inspired by the sources used by authors of academic articles that have conducted literature reviews on the topic of agile transformations, such as (Dikert et al., 2016). In general, we tried to use common and broad sources. However, to be on the safe side, a test was performed to see if other sources would add a greater number or more specific articles. The answer was negative.

In choosing the most appropriate terminology for finding references, it is important to understand the meaning of the terms used and what is being sought with them. First of all,

we have everything related to transformation processes, understood as transitions within organizations, which seek to give them certain characteristics. These characteristics are defined by agility, a working philosophy (Beck et al., 2001) born in the world of software development and extended to the whole organization in the form of business agility and equivalent terms (enterprise agility, organizational agility), or sometimes defined as the ability to “scale” agility (Leffingwell, 2007). It is a state that favors the adaptability of the organization in the face of changes in its context and environment. “Model” here refers to narratives (Taleb, 2012) that help manage these transformation processes.

As for the terms used to locate references, a series of very general words (“agile”, “agility”...) on the subject were used to ensure a sufficient volume of content, together with other much more limited terms inspired by the terms used by the authors of previously known articles on agile transformations.

In addition, certain terms were excluded as they were not totally related to the focus of this study. For example, terms that refer to very specific aspects such as frameworks or techniques (“Scrum”, “Kanban”, “Retrospective”), or that refer to agility at the team level were avoided, as we focused on the transformation of the entire organization. The same applies to terms related to scaling frameworks (“SAFe”, “Nexus”, “Spotify”), with the exception of two more general terms (“agile at scale” and “scaling agile”), because we found that they were used in previously known literature as a way of expressing organization-wide change.

We also excluded terms that were too general, such as those that expressed the idea of organizational change without including agility.

The terms selected are a set that includes very general aspects (“agile”, “agility”) and more specific ones such as “business agility”. There are several reasons for the choice of terms: the more general ones were chosen to ensure a minimum number of references and, as soon as it became clear, the result was the opposite, with too many. Another set of terms refers to the different ways of naming the goal of the transformations: “business agility”, “enterprise agility”, “organizational agility”, or “adaptive organizations”, and finally, those related to transformations and their challenges.

Thus, we started our search using terms such as “business agility”, “organizational agility”, “enterprise agility”, “agile transformation”, “adaptive organizations”, “agile”, “agility”, or “agile at scale”. Table 1 provides a summary of the results for each of the terms selected from the sources used.

A comprehensive examination of the literature revealed that a considerable number of articles were not directly related to the subject of transformations and the associated challenges. For instance, the term “business agility” is employed in diverse contexts, including economics, business administration, and other fields, and is not inherently related to the concept of agile transformation. A similar phenomenon occurs with other general topics, such as “agile” and “agility”, which are often associated with the overarching characteristics of systems and organizations. Even more specific keywords, such as “scaling agile” or “agile transformation”, yield results related to the introduction of specific frameworks in a context usually of software engineering, rather than the comprehensive process of transformation under investigation. In this sense, it is worth noting that agility was born, and is an essential part of software engineering, but agile transformations tend to cover the whole organization, acting as way to translate concepts and benefits of software engineering into the core definition and functioning of an organization.

To ensure the most comprehensive analysis, search terms considered too generic (e.g., “agile”) were excluded, and the focus was narrowed to the most representative terms. To this end, we followed a process of gradual refinement of the terms used. To do this, we relied on articles already known and relevant to the topic (i.e., agile transformations and

the factors that enhance or inhibit them). What we did gradually was to sample the results to check that excluded articles were not relevant to this work and that previously known articles were included in the terms finally selected.

Table 1. Results of searching articles related to agile transformations towards business agility.

	Google Scholar			WoS	Scopus	
	Any Type	Review Articles	Total	Review Articles	Article	Books
agile	1,250,000	38,500	28,206	584	5962	188
agility	679,000	32,800	16,541	605	777	40
agile transformation	271,000	10,300	1,142	35	224	20
“agile transformation”	4160	197	156	5	37	3
“agile transformation” challenges	3650	217	72	3	14	0
“agile transformations”	1580	124	1	1	37	3
“agile transformations” challenges	1340	115	1	1	14	0
“business agility”	12,600	537	316	2	85	2
“business agility” agile	6150	265	73	1	13	2
“business agility” agile transformation	4970	195	13	0	0	1
“business agility” agile transformation challenges	4820	221	6	0	0	0
“organizational agility”	20,300	998	582	17	117	1
“enterprise agility”	5450	269	185	9	12	4
“adaptive organizations”	4520	185	51	2	28	0
“agile at scale”	773	34	17	2	4	0
“scaling agile”	2770	187	97	4	29	1

This resulted in a total of 221 articles reviewed on Google Scholar (search term: “Business agility” agile transformation challenges), 13 in WoS (search term: “Business agility” agile transformation), and 13 in Scopus (search term: “Business agility” agile). The most intriguing findings emerged from keywords related to “agile transformations,” although they were occasionally quite limiting.

Certain criteria were used to include or exclude references. Preference was given to articles on organizational transformations that use or are based on the values and principles of the Agile Manifesto (Beck et al., 2001), or that identify business agility (and related terms) as the goal of the process. Excluded are articles that focus on transformation processes at the team level, that focus on the application of specific agile frameworks (such as Scrum, Kanban, or SAFe), and that focus solely on the software industry or the impact on IT departments within organizations.

Finally, following a comprehensive examination of the articles (abstracts, keywords, and, on occasion, the content), a list of 42 was ultimately compiled.

During the analysis, a pattern emerged that starts to confirm what we are looking for in this paper. This pattern is the tendency to group factors according to thematic areas or affinities. That is, the different authors look for ways to organize and thematically structure around dimensions or other similar entities the factors, key aspects, and other elements of transformation processes and agile frameworks.

In the selected articles, we have found only one real reference to a transformation framework or model (Laanti, 2017). However, it is more a way of defining the level of progress or maturity of the transformation rather than a list of key aspects or dimensions on which to focus the transformation process.

In the sense of our study, it is more interesting an article when the experience of transformation in a particular organization, for example Lego, is exposed and when a number of dimensions of transformation are listed (Sommer, 2019).

The rest of the references, while very valuable for studying the factors that influence the success or failure of agile transformation, are not useful for the purpose of our work. For example, there are several articles that analyze the transformation process in a single organization (Sommer, 2019; Laanti et al., 2011), or that focus on a specific framework (Paasivaara, 2017; Verwijs & Russo, 2023), or on very specific aspects of the transformation process (Kaya, 2023).

2.1.2. “Gray Literature”

For this reason, we have turned to other non-academic but very numerous sources. These include posts, articles on websites, and books. All of these sources are written from the perspective of their authors, but without following a rigorous formal review process (or exceptionally as in (D. Rigby et al., 2020)).

As in the case of academic articles, searching for articles in the “gray” literature required a filtering process using the same combinations of terms. The main difference was the use of generalist search engines (such as Google), which returned an enormous number of results. Applying the same criteria as in the case of the academic literature, which meant excluding articles on specific frameworks, referring to application at the hardware level or only in software development processes, could greatly limit the volume. A more detailed analysis allowed us to identify interesting content on certain aspects of agile transformations (such as the factors that facilitate or hinder them) and several references to models found in other types of content, such as books and websites of organizations dealing with business agility.

Those two types of content are particularly relevant: books, which usually involve a more rigorous process of creation and review, and which incorporate references that can be traced; and the content of certain websites specifically dedicated to the study of business agility.

Our analysis of academic literature returned several books, which serve as the initial point of reference for a more comprehensive search. In addition, other tools have been employed to identify books like Google Books (for comprehensive searches based on title, author, or keywords) and Goodreads (based on recommendations). To reduce the number of search results, certain limitations were introduced. The following were excluded:

- Publications prior to 2000;
- Publications that referred only to teams or departments, not the entire organization;
- Publications that dealt only with specific frameworks or techniques;
- Publications that referred only to the industry or activities directly related to software.

The following were included:

- Publications related to the values and principles of agility;
- Publications related to aspects of business agility transformations.

As in the case of academic papers, the majority of the books identified pertain to topics that are not directly related to agile transformations or deal with very specific aspects such as the use of certain tools or frameworks. After applying successive filters with more specific search terms and the mentioned criteria, we ended up with a list of 111 books.

A comprehensive examination of the books, or their respective indexes when available, reduced the list to 41 books that have been read or at least subjected to detailed analysis. Of these, 10 titles address the specific topic of agile transformation and the factors that facilitate or impede these processes.

The quality of this type of literature varies considerably. Some works are of considerable value, incorporating data from their own study and analysis (as in D. Rigby et al.,

2020), lists of factors that enhance or inhibit transformation processes (as in [Mundra, 2018](#)), or their own framework for facilitating transformation (as in [Spayd & Madore, 2020](#)).

As in the case of articles, the books show the tendency to group together factors and to explain the transformation process by attending to the aspects of the organization where changes are applied and where the effects of these changes can be observed. In several books, these aspects are presented in the form of models or referred to as dimensions of the transformation or other equivalent terms, where each author has their own perspective and grouping criteria.

In addition to academic papers and books and practitioners' articles, we have identified other models that are already present and applied in industry.

These models have been published by companies and organizations that promote the study of business agility. However, in order to apply the greatest possible rigor, generalist search tools have been employed in an attempt to complete the list of models.

To conclude, 15 sources have been selected for this research. The sources have been divided into the following categories: six sources were obtained from books, one from articles, and eight from organizations and companies. Furthermore, other sources were identified, but they did not contribute a differential value to the selected set, or they were not citable. These sources were for internal use in certain organizations and there are no published references or descriptions.

All subsequent work is based on the analysis of these sources.

2.2. Data Curation and Analysis

Following the identification of the sources, the available information was subjected to analysis in order to extract the models and their respective dimensions. The process was essentially a traditional text review, with the assistance of AI tools employed to summarize and extract relevant information. From each source, we identified and extracted the relevant aspects of a transformation, seeking to identify similarities and affinities. In certain instances, it is relatively straightforward to identify likenesses, given that the terminology employed to describe these aspects is often similar (e.g., "Culture" or "Leadership"). In other cases, it has been necessary to identify affinities by analyzing the way in which they are defined and looking for related elements from other sources.

Fortunately, in certain texts, this process has been relatively straightforward. Several materials are structured around this idea of dimensions (as in ([Harbott, 2021](#); [Mundra, 2018](#))). In other instances, it needs a more laborious process to extract the information on dimensions from materials that do not rely on them as elements that articulate their discourse. Finally, there have been instances where, despite the use of elements that appear to be analogous to the concept of dimensions, it has been possible to discern that the author or the authors were not defining a genuine model, but rather a method of enumerating "laws" ([Denning, 2018](#)) or means of providing solutions to partial problems of organizations.

The sources analyzed usually include a definition of business agility that tends to converge on the notion of adaptability. Another commonality among these definitions is that they do not focus on specific outcomes or goals, but rather on the continuous process of transformation. This process is further informed by the implicit assumption that business agility is contingent upon the agility of teams and the principles and values espoused in the Agile Manifesto ([Beck et al., 2001](#)).

The 15 sources selected for the literature review (comprising books, articles, and websites) were subjected to a data curation and analysis process. This section presents the results and conclusions derived from this procedure.

The number of dimensions varies across sources. For instance, Evan Leybourn (Leybourn, 2016) defines three dimensions, while Lego (Sommer, 2019), McKinsey (Aghina et al., 2018), and Hesselberg (Hesselberg, 2018) have five, and Disciplined Agile (PMI, 2022) eight. The Business Agility Institute (Sidky et al., 2024) has five domains and 18 capabilities.

It should be noted that not all of these dimension collections are homogeneous. Some models place greater emphasis on organizational aspects, while others focus on operational ones. Consequently, a synthesis exercise should not seek only the common elements (there are none: the most mentioned, which includes the aspects related to the structure of the organization, is not present in all models), but rather those that cover broader aspects within the organization. This is because business agility seeks to bring the benefits of agility, and, thus, the lessons learned in the field of software engineering, to the whole organization (Agile Business Consortium, 2024).

The sources consulted and the dimensions identified can be found in greater detail in the following subsections.

Table 2 illustrates the different models analyzed and how their dimensions have been grouped in the synthesis model presented in Section 4.

A complete definition of the dimensions of each model can be found in Appendix A.

2.2.1. Lego Model

The Lego model (Sommer, 2019) is built around five dimensions that define a map and a roadmap, with each dimension having its own pace of implementation.

The Lego framework definition was influenced by the work of D. Rigby et al. (2020) and their dimensions are defined accordingly.

2.2.2. Harbott Model

The book, “The 6 enablers of Business Agility. How to Thrive in an Uncertain World” by Harbott (2021), is developed around the six enablers of the title, which define a model with six dimensions that enable business agility, in addition to a wide adoption of agile team practices. According to the author, the most effective approach to achieving the objectives of business agility, including increased adaptability and sustainability, is to prioritize transformation within the wide scope of these six dimensions.

2.2.3. Hesselberg Model

This model is presented in the book, “Unlocking Agility: An Insider’s Guide to Agile Enterprise Transformation”, by J. Hesselberg (Hesselberg, 2018). The vision of business agility, as presented in this book, is a paradigm that enables an organization to learn faster, better, and more economically in order to achieve the “agile advantage”, which allows it to thrive and survive future challenges. This, in turn, makes the organization more adaptable and sustainable. The concept of business agility can be defined as a transformation in the way of working, thinking, and creating value.

The way to achieve business agility is defined by the five elements (dimensions) that structure the content of the book. The work of Hesselberg has deep roots in the world of software engineering.

Table 2. Models analyzed and their dimensions grouped according to the model proposed in this paper.

[illegible]

Table 2. Cont.

	9DSM	Lego	Harbott	Hessellberg	Mundra	BAI (Until 2022)		BAI (Since 2022)		ABC	Evan Leybourn	Disciplined Agile	McKinsey	Doing Agile Right	Bosch	Agility Health	SAFe	IATF
Value generation	Processes	Performance measures	Ways of working		Process	Operation	Process agility				Process Agility	Enterprise Architecture	Process	Agile processes and technology Agile Planning, Budgeting and reviewing	Process and Methods	Agile Framework & mindset	Teams and Technical Agility	Practices & Behavior
		Delivery processes				Relationship	Workforce					Agile Product Delivery					Leadership & Mindset	
						Relationship	External partners										Organizational Architecture	
	Delivery	Delivery processes				Relationship		Value-based delivery Deliver value sooner Unleash workflow creatively Value-based delivery Prioritize, Prioritize, Prioritize			Process Agility	Product Manage- ment				Agile Framework & mindset	Enterprise solution delivery	
		Performance measures				Relationship	External partners					Agile Product Delivery						
	Technology			Technology	Technology						Technical Agility	information Technology	Technology	Agile processes and technology		Technology agility	Teams and Technical Agility Enterprise solution delivery	Practices & Behavior

2.2.4. Mundra Model

The book, “Enterprise Agility: Being Agile in a Changing World”, by S. Mundra ([Mundra, 2018](#)) offers a comprehensive vision of business agility, presented from a practical perspective. It comprises several sections, each of which depicts a distinct dimension of agility. Each section provides a comprehensive catalog of the inhibitors and enhancers of agility. In this manner, the text serves not only as a theoretical vision of how an agile company should be, but also as a manual for implementing that vision in practice. Mundra provides a technical view of business agility, influenced by concepts from software engineering.

For Mundra, organizations must go beyond some practices towards a real transformation that allows us to achieve the capabilities underlying agility: responsiveness, versatility, flexibility, resilience, innovativeness, and adaptability in a sustainable way.

The book is structured around six key dimensions.

2.2.5. Business Agility Institute (Before 2022)

The Business Agility Institute (BAI) ([Sidky et al., 2024](#)) is a leading authority on the definition and study of business agility. Its model is widely recognized and serves as a source of inspiration and a foundation for frameworks and tailored models in numerous companies. The BAI has defined two distinct models (or a model and its evolution).

Until late 2022, the original BAI model consisted of four dimensions and 12 domains. The model was constructed around the concept of customer centrality.

2.2.6. Business Agility Institute (After 2022)

The BAI model was reformulated into a late 2022 version. This version 4.0 introduces several changes that make it possible to see the model as a new one, distinct from the previous version. The new model comprises five domains and 18 capabilities. Capabilities are associated with a set of behaviors oriented towards the three main roles considered in the model: executives, leaders, and everyone. One of the main changes is that customer centrality has become an additional domain, instead of its original central role.

2.2.7. Agile Business Consortium

The Agile Business Consortium (ABC) ([Agile Business Consortium, 2024](#)), previously known as the DSDM Consortium, has the objective of defining and promoting business agility. ABC has developed its own business agility framework (“Business Agility Works”).

Business agility is the capacity to adapt to change, which is essential for organizations operating in uncertain, complex, and ambiguous environments. An agile organization can respond rapidly and effectively to both internal and external opportunities, making it more adaptable and sustainable.

The model is presented on the website through a picture that illustrates the five dimensions, which are situated around two central elements: operational agility, which represents the capacity to provide an agile response to challenges; and business change agility, which represents a change management approach that is supported by an agile management of projects and programs.

2.2.8. Evan Leybourn Model

The model ([Leybourn, 2016](#)) was initially presented in the author’s 2013 book ([Leybourn, 2013](#)) and subsequently elaborated upon in his website, ultimately leading to the BAI model ([Sidky et al., 2024](#)). The three dimensions of the model can be readily determined from the article and the associated chart on the author’s website.

The dimensions of this model can be regarded as a progression in the scope of agility within an organization, commencing with “Technical agility” as the initial stage.

2.2.9. Disciplined Agile

The Disciplined Agile Enterprise (DAE) (PMI, 2022) initiative was launched by the Project Management Institute. A DAE is capable of sensing and reacting promptly to changes in its environment. To achieve this, it requires mechanisms that facilitate the transformation of the organization into a more adaptive entity. This is defined by the Disciplined Agile toolkit, which is depicted on the organization’s website and is structured around four layers: Foundations, DevOps, Value Stream, and the DAE itself. The latter layer has eight “blades”, or process blades, that are related to specific organizational capabilities. These blades can be assimilated to dimensions in the sense used in this paper.

2.2.10. McKinsey

This consulting firm has created a website and a series of articles that reflect their vision of enterprise agility (which is their term for the more common term of business agility in the industry). The dimensions are clearly defined in several articles, for example, in (Aghina et al., 2018).

For McKinsey, the dimensions serve as markers of progress for companies undergoing transformation into agile enterprises. This way, the dimensions are places to examine progress and put the focus of the transformation.

2.2.11. “Doing Agile Right” Model

This book, by Rigby, Elk, and Berez (D. Rigby et al., 2020), offers a comprehensive overview of transformations and the factors with the greatest impact on them. It is based on the authors’ experience and is supported by a literature review. The book presents a four-dimensional model.

2.2.12. Bosch Model

The Bosch model is mentioned as a use case by D. Rigby et al. (2020). The dimensions in this model are defined as tracks of work for the transformation team. It has five attention points. The meaning of these dimensions is aligned with the rationale in the aforementioned book (D. Rigby et al., 2020).

2.2.13. Agility Health

Agility Health (Agility Health, 2024) is a company that offers learning and assessment services and that has its own model with seven pillars, equivalent to dimensions.

2.2.14. SAE

The Scaled Agile Framework (SAFe (Scaled Agile Framework, 2023)) is a framework to scale agility beyond small teams (Leffingwell, 2007) and, overall, towards a complete body of knowledge about agility. SAFe has its roots in the realm of software engineering, helping technical organizations to scale but, with time, SAFe has been extended to help whole organizations. Business agility is defined by SAFe as the “operating system for organizations in the 21st century”, that makes them more adaptive and sustainable. SAFe defines seven core competencies of business agility that act as dimensions in other models.

These competencies are depicted around customer centrality, which is defined as a mindset that makes it possible to obtain benefits for the organization.

SAFe also contains 21 so-called “dimensions”, three for each core competency, but here “dimension” has a different meaning: SAFe “dimensions” are practices and ways to achieve the purpose of Enterprise Solution Delivery.

2.2.15. Integral Agile Transformation Framework

The model depicted in the book, “Agile Transformation: Using the Integral Agile Transformation Framework to Think and Lead Differently”, by M. K. Spayd and M. Michelle (Spayd & Madore, 2020) uses the Wilber quadrant (Wilber, 2001) to define a general framework for agile transformations. The quadrant describes the four main areas on which to focus the transformation process. Each quadrant is structured in “holons,” which define the structural level of the organization: organizational, program, and team-level. The rationale behind this is that the conditions and needs of each holon are distinct, needing different solutions and practices.

2.3. Criteria for Model Development

Following the collection and selection of data, a proposal was developed, which can be found in Section 3, where it is explained in detail. Here, in this section, we will only provide an overview of the criteria that were used to develop a unified model to serve as a guide for the organizations involved in an agile transformation process.

The diversity of models presents a challenge for organizations, which, in numerous instances, have resorted to defining their own models. This makes it challenging to conduct comparisons, extract data, and share lessons learned. In the context of our study, which aims to analyze the factors that enhance or inhibit agile transformations, it is essential to utilize a unified language and nomenclature to facilitate comparisons. It is evident that none of the models is entirely satisfactory. All of them are biased or incomplete, which has necessitated the generalization of the data, and the creation of a model based on the literature analyzed.

Our model integrates frequency (dimensions more mentioned) with completeness to encompass a comprehensive range of organizational aspects. This approach aligns with the various definitions of business agility, which emphasize that this paradigm affects the entire organization in order to enhance its adaptability.

In our exercise, we have selected a sufficiently comprehensive list of dimensions that encompasses all the aspects mentioned in the various models. This does not imply the inclusion of all the dimensions mentioned in the literature. Instead, it is a synthesis exercise with nine dimensions, plus two transversal ones. The nine dimensions can be grouped into blocks of three for the sake of clarity. The number of dimensions (9) was not predetermined with the intention of seeking a certain aesthetic or narrative simplicity. Rather, it is the number of dimensions that emerged from the study.

3. The Nine-Dimensional Model

In this section, the condensed nine-dimensional model is presented (Section 3.1) and compared to other previous models (Section 3.2).

3.1. Model Definition

Table 2 contains the dimensions of the different models analyzed, along with a correlation to the nine dimensions derived from the synthesis process.

In order to create our model, we identify all dimensions using the following criteria:

- **Frequency:** We look at those dimensions that are repeated more frequently in the different models. There is no one dimension that appears in all of them, but there are several (leadership, people, organizational structure, or governance) that appear with a higher frequency.
- **Completeness:** One commonality among the various definitions of business agility is the notion that it encompasses the entire organization. Consequently, although the different authors express their biases and preferences through their models, a

more generalized approach has been sought to cover a wider range of aspects of the organization and its operations. For this reason, we have selected dimensions that may not appear frequently, but that help to extend business agility to other aspects of the organization that are less frequently mentioned.

- **Simplicity:** The number of dimensions in the models analyzed varies considerably, ranging from 3 to 18 (with an average of approximately 7). An effort has been made to limit the number by seeking affinity between dimensions. The final number, 9, strikes a balance between the need to avoid unnecessary breadth and the desire to include all relevant aspects of the organization.

The list of dimensions, with an explanation of their origin (a detailed description can be found in Appendix B):

- “Human” dimensions
- **People:** The topic of people-related aspects is mentioned directly in 11 of the models analyzed, and indirectly in the remaining ones. Therefore, it is selected following the frequency criteria. People-related aspects (grouped in this set of “Human” dimensions) are a constant in all the models analyzed. They are sometimes mixed, but they are always present. The way people are treated, developed, and evaluated in the organization is present explicitly in 11 models, while in the rest they appear intermingled with cultural and leadership issues.
- **Culture:** Cultural change and the implementation of a new agile culture are explicitly or implicitly present in all models. It is mentioned in 10 of the models, although in the rest they may appear as part of the people- or leadership-related dimensions. They are incorporated into the model according to the frequency and completeness criteria.
- **Leadership:** This is one of the most commonly referenced dimensions (it appears explicitly in 12 models) because, for the majority of authors, the path to business agility necessitates a re-evaluation of leadership and management within organizations. In fact, we have identified several references (books in particular) that focus on a new approach to agile leadership. It is incorporated into the model according to the frequency criteria.
- “Organizational” dimensions
- **Strategy:** Mentioned in nine models. There is no consensus among models regarding the modification of the organizational strategy definition, communication, and development processes. However, this is one of the key aspects that makes it possible to extend the scope of the transformation.

It is incorporated into the model according to the frequency and completeness criteria.

- **Governance:** Mentioned in 11 models. Governance is a heterogeneous dimension that encompasses a range of elements related to decision-making processes, including finance, planning, budgeting, and portfolio management. This way, governance applies the simplicity principle in addition to the frequency.
- **Organization:** This dimension is the most frequently referenced, appearing 13 times in the data set. It encompasses all aspects of organizational design and is one of the most consistent in its definition. Given that agility is often operationalized through changes in work practices, it is essential to align the organizational structure with these changes to ensure effective implementation. It is part of the model following the frequency criteria.
- “Value creation” dimensions
- **Processes:** This is another of the dimensions most frequently mentioned by the different models (12 times), which makes sense given that the typical approach to initiating an agile transformation is to implement changes in the way of working. This dimen-

sion encompasses the application of diverse agile methods and frameworks (such as Scrum, Kanban, or SAFe).

It is incorporated into the model according to the frequency criteria.

- **Delivery.** Although it is not referenced as frequently as the other dimensions (mentioned in six models), it has been included because it addresses another critical element of this process, which is also included in the cross-cutting customer dimension (mentioned four times). This is the definition of agile value streams, which represent the sequence that leads from an idea or need to a product or service in the hands of customers. Indeed, as part of the aforementioned study (Alvarez & Bordel, 2024) conducted with various organizations, this is one of the primary areas of focus, and where the most significant inhibitors and enhancers of agile transformation have been identified.

It is incorporated into the model according to the completeness criteria.

- **Technology.** This particular dimension is present in nine of the models that were analyzed. In addition to its frequency, this dimension is selected for the completeness criterion, as it helps to cover a strategic element in any current organization, such as technology. In this context, “technology” refers to the enabling factors of agile transformation, which must evolve to facilitate the change. Just as business agility is a way to translate concepts and principia of software engineering into the organizations, technology acts a bridge between the two worlds.

It is incorporated into the model according to the frequency and completeness criteria.

While other dimensions are mentioned in the models analyzed, they are not a common occurrence. In some cases, a single author may mention a dimension, such as “Financial processes”, “Legal”, “Vendor management”, or “External partners”. Fortunately, we have been able to fit all these dimensions into one of the nine dimensions of our model, as can be seen in Table 2.

The dimensions explain the “what” and the “why.” It is important to remember that agile transformation processes have a strong practical component, which implies asking about the “how”. In that sense, it is possible to list some of the techniques, practices, frameworks, methods, or concepts that would be part of each dimension.

To fully understand the reason for each of them, an explanation about their origin, definition, and content can be found in Appendix B.

A visual representation of the nine-dimension model can be found in Figure 2.

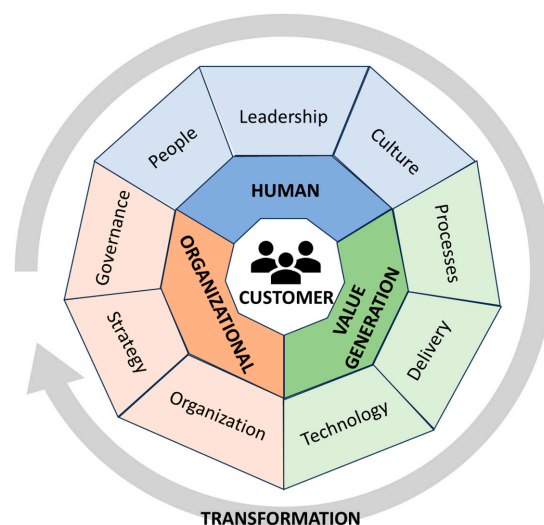


Figure 2. A visual representation of the nine-dimensional model.

Table 2 provides a summary of how the various models are mapped into the nine dimensions, offering insight into the origin of each dimension in the model. Figure 3 presents a visual representation of the weight assigned to each dimension within the set of analyzed models. This weight is the number of models that mention each of the dimensions, either directly, under another name, or as part of one of the dimensions of those models, and is based on the data in Table 2.



Figure 3. The weight of the dimensions of the individual models identified in the literature into the nine dimensions of the model proposed on this paper.

This same graph can be easily adapted to an organizational context, facilitating the identification of pivotal aspects in the transformation process, areas of focus, and potential areas for improvement.

3.2. Comparison Between the Synthesis Model and Those in the Literature

How does the nine-dimensional synthesis model compare with those identified in the study?

The number of dimensions (9) is an intermediate value, but the most interesting is the analysis of their content (each of the models is analyzed in detail in Appendix A of this paper, while the details of the dimensions of the proposed model can be found in Appendix B):

- The Lego model (Sommer, 2019) has five dimensions that are included in the synthesis model: "Organizational Structure" and "Delivery Processes" have direct equivalents in "Organization" and "Delivery". "Mandate" is part of "Governance" for Lego, while "Financial Processes" can be included in more than one dimension, although it fits best in "Strategy" because of its role in defining the organization's roadmap.
- The performance measures dimension is spread across several dimensions, particularly process and delivery.

The Lego model leaves out important aspects related to people and culture and does not consider technology.

- Harboot's six-dimensional model (Harbott, 2021) has many points in common with the one proposed in this paper. First of all, it gives great importance to the human dimensions: "Organizational Culture", "People and Engagement", and "Leadership and Management" have an equivalent in "Culture", "People", and "Leadership". The

other three dimensions of the model (“Governance and funding”, “Organizational structure”, “Working practices”) also have direct equivalents (“Governance” and partly “Strategy”, “Organization”, “Processes”, or also “Delivery”).

The main difference is that “Technology” is not included as a dimension.

- Hesselberg’s model (Hesselberg, 2018) has five elements (dimensions) that map directly to the synthesis model: “Culture”, “People”, “Leadership”, “Organizational Design”, and “Technology” have direct equivalents. This model does not consider strategy, governance or processes as part of business agility, which makes it less complete.
- The model described in S. Mundra’s book (Mundra, 2018) is organized around six dimensions. Five of them have direct equivalents in the proposed synthesis model: “People”, “Governance”, “Organizational Structure”, “Processes”, and “Technology”. The additional dimension “Customer” can be seen as embedded in “Delivery”. In general, the customer is seen as the axis around which business agility is built, one of the goals of which is to increase customer centricity.
- This model does not include elements related to leadership, strategy, or organizational culture.
- The Business Agility Institute’s (BAI) (Sidky et al., 2024) first model (version 3.1, 2020) had four dimensions and 12 domains built around customer centricity. The dimensions are very broad and are included in the nine-dimensional synthesis model: “Relationships” (governance, organizational structure, people, processes, and delivery), “Leadership” (which also includes strategy, processes, structure, and governance), “People” (culture, people management, and processes), and “Operations” (processes and delivery).

The major missing element in this model is technology, which is not considered part of business agility.

- The second BAI model (late 2022) has a different structure, although it can be related to the dimensions of the synthesis model: responsive customer centricity, engaged culture, value-based delivery (delivery and processes), flexible operations (processes, strategy, governance, organization) and people-first leadership.
- In general, all aspects of the nine-dimensional synthesis model are covered, including technology, which would be part of flexible operations. The main difference between the two models is that certain elements are included but less relevant (people, technology, strategy).
- The Agile Business Consortium (ABC) (Agile Business Consortium, 2024) has a model of five dimensions, all of which are included in the synthesis model: “Agile Culture”, “Agile People”, “Agile Leadership”, “Agile Governance”, and “Agile Strategy”. This is a model that leaves out the operational aspects of the organization, such as processes, delivery, or technology, and puts a lot of focus on the dimensions that we can call “human”.
- Evan Leybourn’s model (Leybourn, 2016) is very simple and represents more of an evolutionary roadmap to business agility. Its three dimensions can be easily mapped to their equivalents in the synthesis model: “Technical agility” (processes, delivery), “Process agility” (organization, processes), and “Business agility” (leadership, strategy, governance). It omits several elements of the synthesis model, but its focus is different: it is about marking the progressive path for the adoption of business agility.
- The Disciplined Agile Enterprise (PMI, 2022) model is quite unique. It has eight “blades” or dimensions that are very much oriented towards aspects of managing the organization. We believe that all of them are included in the synthesis model: “Enterprise Architecture” (organization and processes), “People Management” (people), “Information Technology” (technology, governance), “Asset Management” (governance,

processes), “Finance” (strategy, governance), “Vendor Management” (processes), and “Legal” (governance).

- It also has a “Transformation” dimension, which is considered a transversal element in our model. As can be seen, compared to the synthesis model, it does not include leadership, people or culture, or the “human” dimensions.
- The McKinsey model (Aghina et al., 2018) has five dimensions that have a clear correspondence with the equivalent dimensions in our synthesis model: Strategy, structure (“Organization” and “Governance”), process, people, and technology. However, it leaves out other key aspects such as leadership and organizational culture, or how value is delivered. It is an interesting model but more limited than the one proposed in this paper.
- The model defined in the book “Doing Agile Right” (D. Rigby et al., 2020) has four dimensions, which are quite broad compared to those of other authors, and which are included in the synthesis model of nine dimensions: “Agile Organization, Structures, and People Management”, which corresponds to “Organization”, “Processes” and partially to “People”; “Agile Leadership”, which also includes cultural aspects; “Agile Planning, Budgeting, and Reviewing”, which corresponds to “Strategy” and “Governance”; and “Agile Processes and Technology”, which corresponds to “Processes”, “Delivery”, and “Technology”. The main difference with the model proposed in this paper is the granularity of the dimensions, which are less granular and less defined than those of the synthesis model.
- The Bosch model described in the previous book (D. Rigby et al., 2020) has five dimensions that correspond directly to those of the model proposed in this paper: Strategy, organization, leadership, process, and methods (which includes aspects of delivery), and culture. The main difference is the absence of “Technology”, since both “Governance” and “Delivery” are partially covered by the dimensions of this model, but without giving them much relevance.
- Agility Health (Agility Health, 2024) as a model is structured around seven “pillars”, which have a close correspondence with the model proposed in this paper, although it is not always direct: “Customer Seat at the Table” is the way to express “Customer Centricity” as the axis around which the model is built; “Lean Portfolio Management” is closely related to “Strategy”; “Organizational Structure and Design” is directly collected in “Organization”; “Agile Framework and Mindset” corresponds to the culture and processes of the organization; “Leadership and Culture” is part of the “Leadership” and “Culture” dimensions of our model; “Make it Stick/Sustain” is part of the cross-cutting aspects of business agility transformation; and “Technology Agility” is partly “Technology” and partly “Processes” and “Delivery”. The most important missing dimension, “People”, is partially included along with the aspects of leadership and culture.
- As noted above, SAgFe (Scaled Agile Framework, 2023), in its definition of an agile scaling framework, includes a set of “competencies” that can be assimilated to the dimensions of a model and that correspond to those of the model proposed in this paper: “Lean-Agile Leadership” with “Leadership”; “Team and Technical Agility” with “Processes”; “Agile Product Delivery” and “Enterprise Solution Delivery” with “Delivery”, although at different scales; “Lean Portfolio Management” with Strategy and Governance; “Organizational Agility” with Organization and, partially, Strategy; “Continuous Learning Culture” with “Culture”.
- The main absentee is “Technology”, which is covered in our model (according to the completeness criterion mentioned above).

- Finally, the “Integral Agile Transformation Framework” model (Spayd & Madore, 2020) has a unique layout, in four quadrants, similar to dimensions, but distributed according to their orientation: external or internal, and individual or collective. The correspondence with the dimensions of the model proposed in this paper are “Leadership and Mindset”, which is related to “Leadership” and “Processes”; “Practices and Behavior”, which would be part of “Processes” and “People”; “Organizational Architecture”, which would be mainly included in “Organization”, but also in “Governance” and “Processes”; and “Organizational Culture and Relationships” for aspects of “Culture”.

This model does not include technology or strategy, and only partially covers issues related to value delivery, making it less complete than our proposal, although its approach is very interesting.

4. Model Use and Study with Users

This section is dedicated to explaining the first use of the model, as a tool for a study on agile transformations, and how in that same study, feedback was collected that helped validate the model.

It is not possible to validate a model in a purely experimental sense, as this would require the model to be tested in a controlled environment. It is a representation of reality, and moreover, of a reality that is not subject to the constraints of experimental laws. Rather, it is a narrative that serves to create a simplified representation, which in turn helps those who are immersed in these transformation processes. Consequently, the sole means of validation is to assess the extent to which this narrative assists those who can benefit from it.

4.1. Model Use

The nine-dimensional synthesis model is a tool that helps the study of business agility and the actions an organization can take to achieve this state. To assess the efficacy and utility of this model, it was used in a study that also included confirmation with users.

The study was designed to identify the primary factors that facilitate or impede agile transformations. Although full details about how the population was sampled and managed were previously reported (Alvarez & Bordel, 2024), here we can provide some key information about the participants and the process:

- We wanted to include organizations that had a relationship and, more importantly, direct experience with business agility transformation processes. For this reason, we focused on attracting organizations that were at least two years into their transformation process or, if they felt they had completed it, this was within the last two years, to obtain a current perspective. Organizations that had not begun or were not planning a transformation were excluded.
- In addition, we looked for consultants who, at the time of the study, were supporting at least two transformation processes in organizations in different industries. The consultants bring an aggregated and transversal vision from their experience with the different organizations they help.
- Through social media, announcements at events and professional forums, and the authors’ own agenda, 45 organizations were identified as potential participants, of which 30 eventually agreed to take part in the study.
- Regarding organizations, 16 of them were organizations that were developing their own transformation process (final organizations); and 14 were from companies assisting third parties in their implementation (consultants). Among those that had developed a transformation process, size ranged from a few dozen to more than

100,000 employees: 10 could be considered large (more than 1000 employees) and the rest small or medium-sized. Looking at when they started their transformation process, nine did so before 2020 and seven after 2020, which many organizations cite as a key milestone in their transformation.

- 99 individuals from 30 organizations have participated in this study: 68 men and 31 women.
- The study was conducted through a series of semi-structured workshops and interviews (the length ranges from 1.5 to 3 h) with individuals from the organizations where three key aspects of transformation were explored. In each of these aspects, qualitative and quantitative questions were posed to facilitate comparison between organizations.
- The participants in workshops and interviews had to answer three main questions: What is the objective of the transformation process, and how can it be measured to determine whether it has been achieved?; Which aspects are most crucial for change, and where is the primary focus of the transformation being placed?; and What factors facilitate or impede the transformation process?
- The mainly qualitative outcomes were proposed and prioritized by the participants, encouraging diversity and variability of responses as opposed to alternative predefined outcomes such as surveys. The results required careful analysis and refinement and benefited from the use of the nine-dimensional model as a tool for structuring the study results.

Figure 4 shows the schema of the workshops and interviews and the role of the model before, during, and after the meetings.

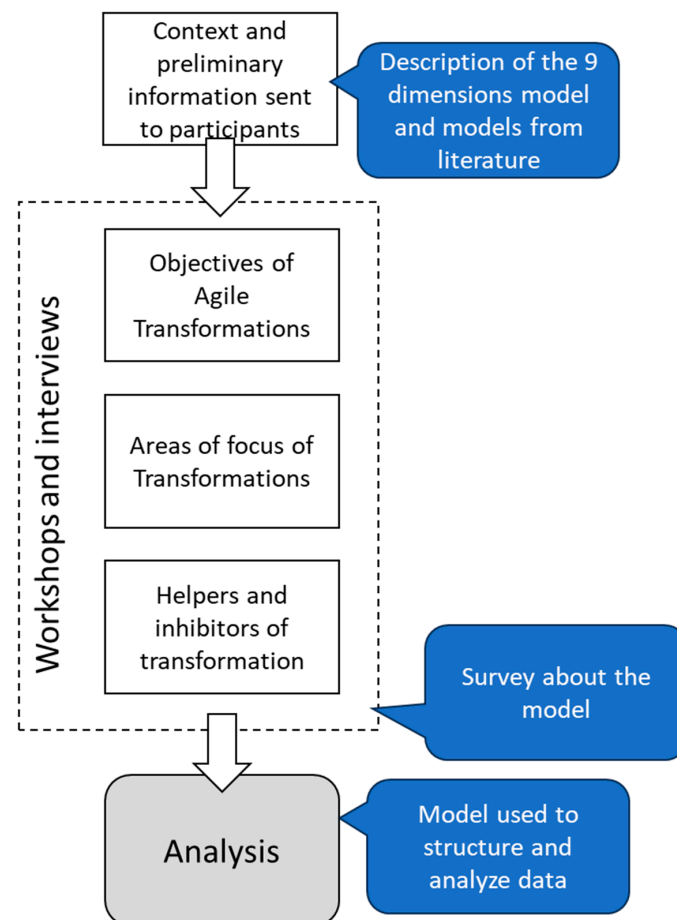


Figure 4. Workshops and interviews schema, and use of the nine-dimensional model.

This nine-dimensional model was used for the third and, most notably, the second question in the workshops and interviews. The model was sent to participants along with information about other alternative models identified in the literature. The purpose was to help explain concepts such as “model” or “dimension” prior to the workshops and interviews. To avoid bias or contamination, only contextual information was given, and the nine-dimensional model was hidden on the board until specifically asked about it.

The model helps participants to identify the key focus areas for business agility within an organization and highlight potential gaps. It can also provide insights into the level of effort invested in transformation, the relative importance of different dimensions, the maturity level achieved in each dimension, and the areas where transformation is showing results. As no single model was deemed entirely satisfactory, it was necessary to create a new one that was sufficiently broad to encompass all the potential responses of the participants. Figure 5 shows the answers about the focus and relevance of transformation in the dimensions of the model from one of the workshops:

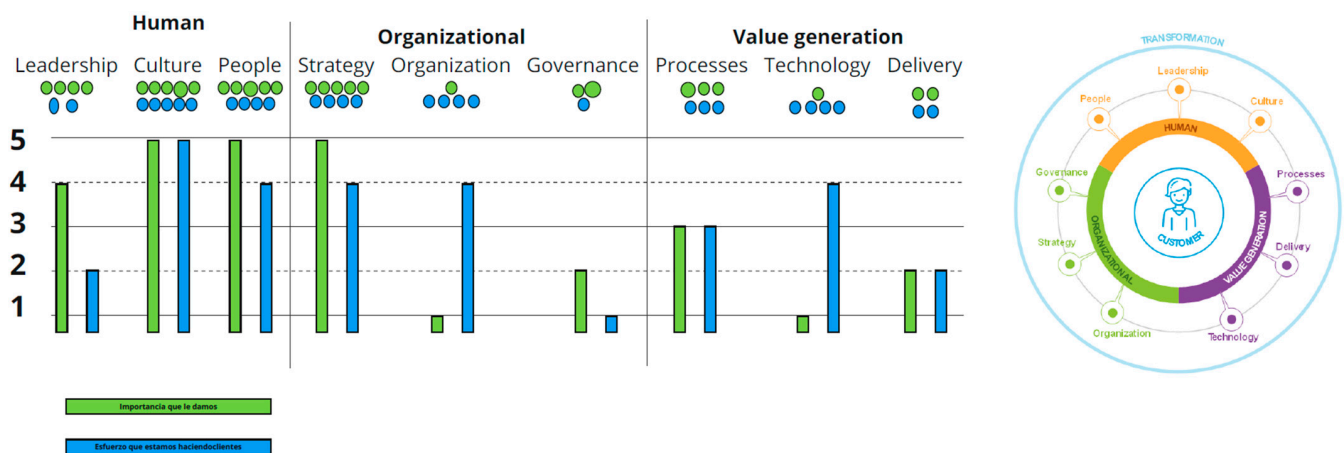


Figure 5. Example of use of the nine-dimensional model in a workshop (all the interviews and workshop were held in Spanish).

During the workshops and interviews, the responses were collected on a series of virtual boards created with the Miro tool. The main aim was to ensure that the participants themselves were directly creating the entries, without the need for an intermediary who would have slowed down the process and introduced bias. In some cases, the sessions were face-to-face, using physical boards with sticky notes that were then transferred to a Miro board. In addition, notes were taken to clarify the meaning of the participants’ entries. These notes were collected in various ways but then unified in a spreadsheet where they were linked to the participants’ entries. From this content, a successive refinement process inspired by NPT (Normalization Process Theory) was initiated to generate a finite list of goals, factors, and dimensions.

The developed model, the nine-dimensional model presented in this paper, serves as a guide and map for understanding the transformation processes and implementing business agility in an organization. This is an alternative to choosing one specific model or creating a new, tailored model for the organization. In the first case, the model may be incomplete or focused on some aspects and leave others uncovered. A tailored, personalized model may present advantages like a higher fit, but it may also result in the avoidance of taking advantage of the work, information, and tools associated with previous models that are already available in the literature.

A further benefit of a unified model is that it facilitates comparison of results across organizations in a quantitative analysis.

Figure 6 shows an example of the use of the proposed model applied to the responses of the aforementioned study. In this case, participants were asked to rate the level of intensity of the transformation in each dimension, and the relative relevance of these dimensions. The figure employed a Likert scale (ranging from 1 to 5). It was anticipated that the two results would align; however, this was not the case. The unified model comprising nine dimensions has enabled us to assess the different perspectives of the various organizations.



Figure 6. The difference between the relevance of dimensions for participants in the study and the focus of the transformation.

In the third part of the mentioned study, we sought to identify enhancers and inhibitors of agile transformations. Our findings indicate that long lists of factors are less effective than organizing the same list around dimensions. Participants in the study reported greater orientation and confidence in identifying factors around the dimensions than in open lists. Even when we asked for their own list of factors without conditioning them with a predefined list, they preferred to answer using the nine dimensions as a model or guide.

The nine-dimensional model provides organizations with a comprehensive view of the scope of a transformation, enabling them to plan actions that address all critical areas of the organization. It also allows for the definition of metrics associated with the process and its outcomes.

4.2. Study with Users

It was not possible to perform an empirical validation of the model with a controlled experiment, for example, by having two very similar organizations start their agile transformation processes with two different models and comparing the results in the medium and long term. But we have used the workshops and interviews to perform confirmation that allows us to answer the research questions posed in the introduction of this paper.

To this end, before each workshop or interview, participants received a document describing the nine-dimensional model, together with a description of the 15 models identified and analyzed in the literature. Then, for the second topic of the session (“Which aspects are most crucial for change, and where is the primary focus of the transformation being placed?”), the participants could present their reference model, either from the market or one of their own (which happened in several cases). Finally, one of the exercises to be carried out was based on the use of the nine-dimensional model: to indicate the degree of relevance and activity (“focus”) of each dimension in their organization.

4.2.1. Research Question #1

Thus, after learning information about the nine-dimensional model and other alternatives, and after having experience of use to determine the value and reception of the model, participants were requested to provide both qualitative and quantitative feedback. The former was very positive, but the latter offered a measure, with answers from 34 participants of the 99 (participation was optional). Full results are presented in Table 3.

Table 3. Summary of data collected about the nine-dimensional model compared to others from the literature.

Characteristics	Higher	Equal	Lower
Completeness	21	13	0
Ease of understanding	18	13	3
Usefulness	13	21	0
Ability to reflect the reality of Business agility	16	16	2
Ability to apply it to my context or organization	17	14	3

- First, after the statement, “It is better to have a reference model of Business Agility, than to lack it and directly list its dimensions” the participants said they “Totally agree” (47%), “Agree” (50%), and “Disagree” (3%).
- After the statement, “When planning, executing and managing an agile transformation process, it is better to have a reference model”, participants said they “Totally agree” (38%), “Agree” (56%), and “Disagree” (6%)

These two results validate our RQ1, “Do organizations demand Business Agility reference models to help them plan and execute their agile transformation processes” to a significant degree.

4.2.2. Research Question #2

Regarding the second research question, “Is the nine-dimensional synthesis model more suitable for Agile Transformations than other currently available models?”, participants had to answer two questions:

- In the case where their organization already had a model, or if they used one, they said about the nine-dimensional synthesis model, “It’s more useful” (9%), “It is complementary” (74%) or “it’s less useful” (3%).
- Regarding the models analyzed in this work, and comparing them with the nine-dimensional synthesis model, the participants evaluated the following characteristics (see Figure 7):
 - “Completeness”: higher (62%), equal (38%);
 - “Ease of understanding”: higher (53%), equal (38%), lower (9%);
 - “Usefulness”: higher (38%), equal (62%);
 - “Ability to reflect the reality of Business Agility”: higher (47%), equal (47%), lower (6%);
 - “Ability to apply it to my context or organization”: higher (50%), equal (41%), lower (9%).

In regard to the RQ2, it should be noted that this model is not intended to supersede any of the other models that have been analyzed. Rather, it is simply a tool that has been developed to facilitate comparison and analysis.

The results indicate the participants’ preference over other models, either their own or from the literature. Thus, RQ2 is also validated.



Figure 7. Results of a survey about the nine-dimensional model among participants in a study about agile transformations.

4.2.3. Research Question #3

Finally, when queried about the model and its use in agile transformations, the responses are (there were several):

- “Visual reference and support” (45%)
- “Process Guide” (32%)
- “Checklist” (18%)
- “Documentation” (5%)

Regarding the RQ3, “Is the nine-dimensional model adapted to the needs of the transformations?”, we believe that these responses, together with those of the previous RQ, confirm the usefulness of the model in responding to the needs of organizations developing transformation processes.

In fact, in addition to assisting in the quantitative analysis of the aforementioned study, we are utilizing the model as a reference guide to structure and organize the results.

For example, when examining the participants’ responses to the objectives of transformations, or characteristics of transformed agile organizations, we have classified them according to the nine dimensions of the model (Alvarez & Bordel, 2024). We believe that this will help relate the relevance and focus of different aspects of transformation to the desired objectives. As a result, we can affirm that the objectives set by the organizations in relation to their agile transformation processes are mainly set in the “Organization”, “Delivery”, and “Culture” dimensions. However, those related to “Leadership” are not among the most relevant characteristics of a transformed organization.

The nine dimensions facilitate the organization of the various agile techniques and practices that can be employed in a transformation process. We believe they can also assist in the definition of the objectives set by organizations in transformation processes and their effects.

Finally, we have received very positive qualitative feedback, and two organizations participating in the study have even decided to redefine their transformation model inspired by the nine dimensions.

5. Discussions, Guidelines, Limitations, and Conclusions

We believe that the analysis of the literature on agile transformations would be greatly enhanced by the use of a model that allows us to organize the different aspects of these processes. Given the existence of multiple approaches, our objective is to establish a common language that facilitates the classification and structuring of key aspects related to organizational transformation. This includes objectives set by organizations in relation

to transformation, the key areas of focus for change, the factors that most influence these transformations, and the tools, techniques, and practices available to organizations.

In summary, the research contributions of this paper area as follows:

- To identify and analyze the various existing models for agile transformation.
- To provide a synthesis model that facilitates the management of agile transformation processes;
- To confirm this synthesis model based on the evaluation of participants in a study on agile transformation. The participants are practitioners from organizations that are undertaking their own transformation processes, or from organizations that are helping others to do so.

5.1. Discussion

The model proposed by the authors is intended to be a tool that facilitates the understanding and management of agile transformation processes. Its main purpose is to reduce the risk of failure of these costly processes.

As a synthesis model, it seeks to complement other models available in the literature. By comparing our nine-dimensional model with those identified in this work, we have found it to be more complete, filling in important gaps left by other models. Considering that business agility encompasses the entire organization, the proposed model extends those of the identified models by adding dimensions not covered, such as delivery (absent in nine models analyzed), strategy and technology (absent in six), culture (absent in five), people and governance (absent in four), processes and leadership (absent in three), and organizational structure (absent in two).

At the same time, the models analyzed sometimes focus on very specific aspects (performance measures, legal, asset management, budgeting, finance). These specific aspects have been included in the dimensions of the proposed model.

We have found models that are very close to the proposed model, but with shortcomings. For example, the models of (Harbott, 2021), (Hesselberg, 2018) and (Mundra, 2018), although missing key dimensions (leadership in the case of Mundra, strategy and processes in the case of Hesselberg, or technology and strategy in the case of Harbott), are well thought out, documented and complemented with tools that help the transformation as techniques or factors that help or slow it down.

The models proposed by organizations such as the ABC (Agile Business Consortium, 2024), BAI (Sidky et al., 2024) or SAFe (Scaled Agile Framework, 2023), also well documented and complemented with tools, have shortcomings despite the fact that they reach a higher level of granularity and detail in the dimensions they include.

For all these reasons, we believe that the proposed nine-dimensional model is a useful tool whose existence and application will be used to fill the gaps in existing models.

When we examined the dimensions that emerged from the analysis of the models studied, we saw that there were relationships between them that allowed for a higher-level grouping. For example, leadership, culture, and people have an affinity with each other because they relate to aspects of people and their relationships. Culture and people appear together in some models, but it was preferred to differentiate them in order to separate the collective aspects from the individual ones.

Other dimensions that have an affinity are strategy, governance, and organizational structure, all of which focus on how the organization is defined and managed. Governance and strategy are also combined in some models, but in our case we prefer to separate the strategic aspects from the operational ones.

Finally, technology, delivery, and processes are the least interconnected, but have in common their contribution to the organization's value creation.

In general, we can say that the dimensions are differentiated but closely related: leadership with strategy and governance; governance with processes and people, and so on.

Regarding the response we received when presenting the model to the participants in our study, it was more positive than we expected.

Although in a few cases participants presented their own models or equivalent artifacts in workshops and interviews, in most cases they did not use a similar system to structure and organize their transformation processes. For example, it was common for them to mention having metrics to see the evolution of different aspects of the organization in the process, but not to group them according to similar dimensions or entities.

In fact, the very concept of models and dimensions usually required explanation. Although it was easily understood, there was little familiarity with its use.

For this reason, the very positive response to our model during the workshops and interviews, and subsequently in the survey responses, indicates a positive reception of the concept and its use. In fact, several organizations expressed their intention to use it.

We might have expected some interest in learning about the model, but not such a positive assessment of its content and potential usefulness. As we said, this is not a validation as such (we cannot do a controlled experiment with several organizations), but it is an indication of its potential to serve its purpose as a tool.

The lack of real tools for transformation probably contributes to this perception. While agile-derived processes are well established and analyzed by both industry and academia, there is a great deal of divergence when it comes to Agile transformations, starting with the very name given to their objective (from “Business Agility” to “Evolvability”), but also including their scope, development, strategies, focus, and indicators.

5.2. Limitations and Disadvantages

Obviously, this “nine-dimensional” synthesis model has limitations.

The rationale behind the mapping of the models analyzed and the synthesis can be debated. There is an explanation, but some equivalences may change. For instance, aspects related to people management are included in “People”, but they can also be viewed from a different perspective as part of leadership attributions.

The highest management levels (often referred to as the “C-suite” in many companies) may have a distinct and separate dimension, rather than being divided between general leadership aspects (such as skills and culture) and more operational areas like strategy and governance.

Even more important than the specific disposition of dimensions and their equivalence to the models analyzed, is to maintain a wide view that encompasses all the aspects, dimensions, or domains mentioned in the models. In this sense, we have examined with a critical view, complemented with reviews by third parties, and no relevant aspect is considered out of the synthesis model.

The model provides a comprehensive overview and an overall roadmap, but it is not a detailed plan for transformation. The model may group factors or describe general situations, but it is not a detailed catalog.

5.3. Guidelines for Practitioners and Policy Makers

The main purpose of the proposed nine-dimensional model is to be a tool for managing an agile transformation process. It can be used to organize the key aspects of the process:

- Identify the areas and aspects of the organization where transformation actions should be launched;

- Differentiate the actions by dimension. For example, training, which is a key action in any transformation process, is very different if we want to have an impact on the management style or if we want to act on the organizational or process model;
- The metrics and indicators that will allow us to know the degree of progress and success of the transformation must be defined according to the dimensions. For example, there must be specific indicators to evaluate the cultural change or the evolution of the organization's governance.

In general, the dimensions act as a way of structuring the actions, information, and indicators of the transformation process. They are a tool for structuring the process in the initial analysis of the state of the organization and throughout the transformation path. By distinguishing the key aspects, it helps not to leave out anything that is really important and contributes to obtaining a complete view of the organization.

5.4. Next Steps

The positive and favorable (qualitative and quantitative) response from individuals who have interacted with the model indicates that it is a valid option to rely on for the next steps. Going forward, our next steps will be to examine the factors that facilitate or impede agile transformations, as previously mentioned, as part of a dedicated study. The synthesis model serves as a guide and a map for classification purposes. These factors can be found in two main sources. First, we are analyzing the available literature on the subject. This process has already begun. The other source is the perception and experience of people involved in agile transformations: organizations that are undergoing a transformation process, and companies that help them (consultants). We are conducting an ongoing study through interviews and workshops involving agility coaches, transformation agents, centers of expertise, consultants, agility PMOs, and other key players in the transformation.

There are differences and misalignments between the perception of people immersed in these processes of agile transformation and what the systematic studies of the academic world offer. In addition, there are no studies (so far) based on effective data-driven studies across multiple organizations, and the number of factors is very high. That leads to the idea that there is space for research on different fronts.

Another line of future research would be to deepen a quantitative validation of the model and to study the relationships between the dimensions in its practical application.

Author Contributions: Conceptualization, A.A.; methodology, A.A. and B.B.; software, A.A.; validation, A.A.; formal analysis, B.B.; investigation, A.A.; resources, B.B.; data curation, A.A.; writing—original draft preparation, A.A.; writing—review and editing, B.B.; visualization, A.A.; supervision, B.B.; project administration, B.B.; funding acquisition, B.B. All authors have read and agreed to the published version of the manuscript.

Funding: This work has received funding from the European Commission through the Ruralities project (grant agreement no 101060876).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data are contained within the article.

Conflicts of Interest: The authors declare that they have no conflicts of interest to report regarding the present study.

Appendix A. Definition of Models Used in the Analysis

Below is a list of the models used in the analysis, with details of their dimensions and domains, and how they are defined by their authors.

Appendix A.1. Lego Model

In its paper (Sommer, 2019), Lego outlined five dimensions that define the focus of transformation. These dimensions constitute a map and define the transformation roadmap (meaning that a different pace of implementation was applied depending on the dimension).

The list includes the following:

- Organizational structure: defined as the internal arrangement of the organization;
- Mandate: Lego is related to ownership and leadership, as well as the manner in which decisions are made and translated (governance);
- Financial processes: essentially related at Lego to budgeting, an aspect that has a direct impact on governance and organization strategy;
- Performance measures: the means by which performance is evaluated. This impact is observed in processes, delivery (which is related to product and value), and, to a lesser extent, strategy (which is required to translate the strategy to the organization);
- Delivery processes: The most significant change implemented by Lego was the transition to a continuous delivery process based on value-added iterations, which aimed to enhance the company's long-term sustainability;

The Lego framework definition was influenced by the work of D. Rigby et al. (2020) and their dimensions are defined accordingly.

Appendix A.2. Harbott Model

The book “The 6 enablers of Business Agility. How to Thrive in an Uncertain World” by Harbott (2021) is developed around the six enablers of the title, which define a model with six dimensions that enable business agility, in addition to a wide adoption of agile team practices. According to the author, the most effective approach to achieving the objectives of business agility, including increased adaptability and sustainability, is to prioritize transformation within the wide scope of these six dimensions. The dimensions are as follows:

- Organizational culture: It is related to values, assumptions, behaviors, and definitions that are stated and shared by people in the organization;
- People and engagement: This dimension encompasses both people management and human resources, but it is essentially about motivations and behaviors;
- Leadership and management;
- Governance and funding: It is the manner in which decisions are made and disseminated. Furthermore, it encompasses the funding of initiatives and portfolios;
- Organizational structure: Harbott maintains that the structure is a pivotal factor in enabling transformation and agility. It is defined by four “laws” from teams’ composition to the whole organization structure. Customer centricity is not a dimension in itself, but a factor that determines the way in which the organization is structured;
- Ways of working: It defines processes at the team level.

Appendix A.3. Hesselberg Model

This model is presented in the book “Unlocking Agility: An Insider’s Guide to Agile Enterprise Transformation” by J. Hesselberg (Hesselberg, 2018). The vision of business agility, as presented in this book, is a paradigm that enables an organization to learn faster, better, and more economically in order to achieve the “agile advantage,” which allows it to thrive and survive future challenges. This, in turn, makes the organization more adaptable and sustainable. The concept of business agility can be defined as a transformation in the way of working, thinking, and creating value.

The way to achieve business agility is defined by the five elements (dimensions) that structure the content of the book:

- Culture: It is one that embraces change, is receptive to new learning, and is open to novel approaches to work;
- People: This model encompasses a range of aspects, from the mindset to the way people are managed within the organization (recruitment, recognition, and growth);
- Leadership: This model differs from traditional organizations in that it reduces the necessity for hierarchical and bureaucratic structures, facilitates connections between individuals and the organization's mission and vision, and values the contributions of diverse perspectives.
- Organizational design: This dimension encompasses the physical configuration of premises and organizational structure from the perspective of management.
- Technology: It is defined as the methods, tools, and techniques that increase the flow and agility within the organization. Although Agile was born in the software engineering domain, it is not usual in the models to give importance to the technological dimension. However, in the case of Hesselberg, it is considered one of the key dimensions.

Appendix A.4. Mundra Model

The book "Enterprise Agility: Being Agile in a Changing World" by [Mundra \(2018\)](#) offers a comprehensive vision of business agility, presented from a practical perspective. It comprises several sections, each of which depicts a distinct dimension of agility. Each section provides a comprehensive catalog of the inhibitors and enhancers of agility. In this manner, the text serves not only as a theoretical vision of how an agile company should be, but also as a manual for implementing that vision in practice.

For Mundra, organizations must go beyond some practices towards a real transformation that allows us to achieve the capabilities underlying agility: responsiveness, versatility, flexibility, resilience, innovativeness, and adaptability in a sustainable way.

This model was born from an orientation close to software engineering, which is reflected in the way the dimensions are described in the selected brakes, and aids in transformation and in the inclusion of technology as one of its dimensions.

The book is structured around six key dimensions:

- People: This dimension encompasses the mindset, skills, and motivations of individuals within an organization;
- Governance: This dimension defines the way to align the organization's resources and capabilities with its objectives, with the aim of delivering maximum value;
- Organizational structure: The structure proposed by Mundra is characterized by a distributed, flat, flexible, and adaptable approach;
- Processes: These processes must be value- or outcome-oriented, pull-based, and enable teamwork, among other characteristics;
- Technology: It is seen as a key lever to achieve business agility;
- Customer: According to Mundra, it is a specific dimension. Without the customer, the organization does not make sense; therefore, the creation of value must be focused on the customer.

Appendix A.5. Business Agility Institute (Before 2022)

The Business Agility Institute (BAI) ([Sidky et al., 2024](#)) is a leading authority on the definition and study of business agility. Its model is widely recognized and serves as a source of inspiration and a foundation for frameworks and tailored models in numerous companies. The BAI has defined two distinct models (or a model and its evolution).

Until late 2022, the original BAI model consisted of four dimensions and 12 domains. The model was constructed around the concept of customer centricity. The four dimensions of the original (version 3.1, 2020) BAI model are as follows:

- Relationship dimension: This dimension encompasses elements pertaining to governance, organizational structure, people management, processes, and delivery;
- Leadership: As a dimension, it encompasses more than leadership or management styles. The dimension encompasses aspects related to strategy, processes, structure, and governance;
- Individuals dimension: This dimension has essentially cultural implications, with aspects related to people management and processes;
- Operation dimension: This is an extensive dimension that encompasses several aspects (while the previous one, for example, is focused mainly on culture).

Appendix A.6. Business Agility Institute (After 2022)

As mentioned above, the BAI model was reformulated in late 2022). This version 4.0 introduces several changes that make it possible to see the model as a new one, distinct from the previous version. The new model comprises five domains and 18 capabilities. Capabilities are associated with a set of behaviors oriented towards the three main roles considered in the model: executives, leaders, and everyone. One of the main changes is that customer centricity has become an additional domain, instead of its original central role.

This model is distributed as follows:

- Responsive customer centricity: This is a new dimension that integrates customer-centricity into the model as an intrinsic element, rather than as an external component that defines the remaining dimensions;
- Engaged culture: Engagement is one of the agile benefits more frequently mentioned in surveys. But this kind of culture needs special conditions to flourish;
- Value-based delivery: This domain is related to the removal of constraints and bottlenecks in the delivery flow in order to optimize value for the customer;
- Flexible operations: Modern organizations are complex adaptive systems that require flexible business operations, including strategy, governance, funding, and the structure of the organization itself;
- People-first leadership: The transformation and reorganization necessary to adopt business agility necessitates significant changes, particularly in regard to culture and mindset. However, these changes are only possible with the support of leadership, which must, therefore, be the catalyst for the transformation. This new style of leadership must be founded on respect, trust, putting people first, and creating an environment that empowers others.

Appendix A.7. Agile Business Consortium

The Agile Business Consortium (ABC) ([Agile Business Consortium, 2024](#)), previously known as the DSDM Consortium, has the objective of defining and promoting business agility. ABC has developed its own business agility framework ("Business Agility Works").

Business agility is the capacity to adapt to change, which is essential for organizations operating in uncertain, complex, and ambiguous environments. An agile organization can respond rapidly and effectively to both internal and external opportunities, making it more adaptable and sustainable.

The model is presented on the website through a picture that illustrates the five dimensions, which are situated around two central elements: operational agility, which represents the capacity to provide an agile response to challenges; and business change

agility, which represents a change management approach that is supported by an agile management of projects and programs.

- Agile culture: It is defined as the values, behaviors, and practices that make it possible to face the challenges of the organization;
- Agile people: It is defined as the profile and mindset of people in the organization;
- Agile leadership: It is a generative leadership with a growth mindset that delegates responsibility and leadership capabilities to every person in the organization;
- Agile governance: It is the way in which objectives are defined and achieved, how to manage risks, and how to optimize performance;
- Agile strategy: It is performed through an iterative process that evaluates continuously the direction, and is open to changes and adaptations.

Appendix A.8. Evan Leybourn Model

The model (Leybourn, 2016) was initially presented in the author's 2013 book (Leybourn, 2013) and subsequently elaborated upon in his website, ultimately leading to the BAI model (Sidky et al., 2024). The three dimensions of the model can be readily discerned from the article and associated chart on the author's website:

- Technical agility: Practices and techniques, typically derived from the software engineering realm, that facilitate the development of agility;
- Process agility: It is related to ways to organize work around teams. It encompasses the application of agile frameworks and methods. Technical agility may be employed to support this process;
- Business agility: This dimension covers ways of understanding leadership or scaling agile concepts and practices to the whole organization (like human resources, or finance);

The dimensions of this model can be regarded as a progression in the scope of agility within an organization, starting with "Technical agility" as the initial stage.

Appendix A.9. Disciplined Agile

The Disciplined Agile Enterprise (DAE) (PMI, 2022) initiative was launched by the Project Management Institute. A DAE is capable of sensing and reacting promptly to changes in its environment. To achieve this, it requires mechanisms that facilitate the transformation of the organization into a more adaptive entity. This is defined by the Disciplined Agile toolkit, which is depicted on the organization's website and is structured around four layers: Foundations, DevOps, Value Stream, and the DAE itself. The latter layer has eight "blades", or process blades, that are related to specific organizational capabilities. These blades can be assimilated to dimensions in the form used in this paper.

The eight blades or dimensions of the Disciplined Agile Enterprise are as follows:

- Enterprise architecture: This defines the way of working of agile teams, and the necessary structures to make this possible. It defines the structure and its processes;
- People management: This includes talent management and development;
- Information technology: This is a separate dimension due to the strategic and critical relevance of technology and software engineering in modern organizations;
- Asset management: It includes the management, support, and governance of different valuable assets within an organization;
- Transformation: This dimension is implicit in the majority of the models. An agile organization is, by its very nature, in a continuous process of change and adaptation. Consequently, the transformation may have a starting point, but it must be continuously sustained and improved in order to maintain and increase the adaptation capabilities;

- Finance: In this model, it plays a role in the team and initiatives funding, and also in education of people;
- Vendor management: This dimension is mentioned only in this model. It has a wider scope, generally related to governance and processes inside the organization;
- Legal: This dimension has the purpose of ensuring compliance with legal regulations.

Appendix A.10. McKinsey

This consulting firm has created a website and a series of articles that reflect their vision of enterprise agility (which is their way of referring to business agility, a more common term in the industry). The dimensions are clearly defined in several articles, for example, in (Aghina et al., 2018):

- Strategy: It is the way to define a shared purpose and vision for the organization;
- Structure: The organizational structure encompasses aspects related to decision-making processes (governance) and the physical space for work. McKinsey's preferred organizational structure is a network of teams;
- Process: Ways of working, how the work is orientated, organized, and performed;
- People: The people that work in the company, their roles, profiles, and relationships, and leadership styles more appropriated for an agile enterprise;
- Technology: It is regarded as a key enabler of transformation, facilitating a shift from viewing technology as a mere commodity to integrating it as a core component across all aspects of the organization. It is worth noting how a consulting firm, generally associated with business and management issues, gives real importance to technology, which also includes software engineering.

For McKinsey, the dimensions serve as markers of progress for companies undergoing transformation into agile enterprises. This way, the dimensions are places to examine progress and channel the focus of the transformation.

Appendix A.11. "Doing Agile Right" Model

This book, by Rigby, Elk, and Berez (D. Rigby et al., 2020), offers a comprehensive overview of transformations and the factors with the greatest impact on them. It is based on the authors' experience and is supported by a literature review. The book presents a four-dimensional model.

- Agile organization, structures, and people management: In "Doing Agile Right," the importance of having structures that support agility is highlighted. These structures enable new ways of working, facilitated by a new approach to people management. This dimension also has implications for culture;
- Agile leadership: Like other models, it emphasizes the significance of leadership in facilitating the adoption and success of agile methodologies. This extends beyond leadership to encompass culture and mindsets. For instance, it suggests that a culture of trust is a more effective approach to leading an agile transformation than a culture of control;
- Agile planning, budgeting, and reviewing: These components enable the creation of iterative feedback loops, which in turn facilitate the implementation of a plan-do-study-adjust system. This has implications for strategy, governance, and processes;
- Agile processes and technology: For Rigby et al., the alignment of three components is essential for enterprises to seize opportunities: customer solutions, business processes, and technology. The first component is based on customer centricity (customers' needs, frustrations, and desired benefits). The other two elements have a strong influence on agile adoption and success. After all, agile adoption typically starts in technology

areas associated with software engineering techniques and then spreads to other areas of the organization.

Appendix A.12. Bosch Model

It is mentioned as a use case by [D. Rigby et al. \(2020\)](#). The dimensions in this model are defined as tracks of work for the transformation team. It has five attention points:

- Strategy.
- Organization;
- Leadership;
- Process and methods;
- Culture.

The meaning of these dimensions is aligned with the rationale in the aforementioned book ([D. Rigby et al., 2020](#)). For instance, “Leadership” for Bosch has the same meaning as “Agile Leadership” for Rigby et al. A similar observation can be made about Bosch’s “Process and Methods”, “Agile processes and technology”, “Organization”, and “Agile organization, structures, and people management”. “Strategy” for Bosch can be mapped to “Agile Planning, Budgeting, and Reviewing” for Rigby et al., as the latter describes three key aspects of organizational strategy. Only “Culture” for Bosch can be mapped directly to the remaining dimension of “Agile organization, structures and people management”, but “Culture” is clearly defined in other models, and “Agile organization, structures and people management” includes also the organizational mindset that is part of culture definitions in an agile context.

Appendix A.13. Agility Health

Agility Health ([Agility Health, 2024](#)) is a company that offers learning and assessment services and that has its own model with seven pillars, equivalent to dimensions, that include the following:

- Customer seat at the table: This expresses the idea of “Customer centricity” or “Customer-focusing organization”;
- Lean portfolio management: This is defined as the application of lean thinking to manage the different portfolios of the organization;
- Organizational structure and design: This dimension is essentially about teams, especially stable, cross-functional teams;
- Agile framework and mindset: This dimension covers the mindset and cultural aspects, and also ways of working and processes;
- Leadership and culture: As defined by Agility Health, this dimension is related to leadership styles, but it also covers cultural and governance aspects;
- Make it stick/sustain: This is a special dimension related to transformation and making the transformation a continuous, sustainable process;
- Technology agility: This is a transversal, foundational dimension that makes it possible and supports the other pillars.

Appendix A.14. SAFe

The Scaled Agile Framework (SAFe ([Scaled Agile Framework, 2023](#))) is a framework to scale agility beyond small teams ([Leffingwell, 2007](#)) and, overall, towards a complete body of knowledge about agility. Business agility is defined by SAFe as the “operating system for organizations in the 21st century” that make them more adaptive and sustainable. SAFe defines seven core competencies of business agility that act as dimensions in other models:

- Lean-Agile Leadership: The leadership style more appropriate for business agility is one that sustains change and excellence by empowering teams and individuals;
- Team and Technical Agility: Ways of working at a team level;
- Agile Product Delivery: For SAFe, the preferred kind of delivery is one customer-centric approach supported by a continuous flow of value;
- Enterprise Solution Delivery: This applies to the whole chain, from ideation, through to definition and construction, to deployment and operation;
- Lean Portfolio Management: It is defined as the way to align strategy and execution. It has an impact on strategy and governance;
- Organizational Agility: It is related to the organizational structure, but also to the strategy, which needs a structure tailored to fit their objectives;
- Continuous Learning Culture: This is a transversal dimension related, not only to the organization culture, but also to the structure of the organization.

These competencies are depicted around customer centricity which is defined as a mindset that makes it possible to obtain benefits for the organization.

SAFe contains also 21 so-called “dimensions”, 3 for each core competency, but here “dimension” has a different meaning: SAFe “dimensions” are practices and ways to achieve the purpose of enterprise solution delivery.

SAFe gives great relevance to technological aspects, especially those related to software engineering (DevOps, for example). Its initial purpose was to help scale technological solutions, although over time it has evolved towards a more general vision that encompasses the entire organization.

Appendix A.15. Integral Agile Transformation Framework

The model depicted in the book “Agile Transformation: Using the Integral Agile Transformation Framework to Think and Lead Differently” by M. K. Spayd and M. Michelle (Spayd & Madore, 2020) uses the Wilber quadrant (Wilber, 2001) to define a general framework for agile transformations. The quadrant describes the four main areas to focus the transformation process. Each quadrant is structured in “holons”, which define the structural level of the organization: organizational, program, and team-level. The rationale behind this is that the conditions and needs of each holon are distinct, necessitating different solutions and practices.

The quadrans or dimensions are as follows:

- Leadership and Mindset: The “I” (individual and internal) quadrant covers leadership styles, but also agile practices at team level;
- Practices and Behavior: The “IT” quadrant, for individual and external aspects of the organization covers processes and persons;
- Organizational Architecture: The “ITS” quadrant (external and collective). This is the domain of structure, but also governance and processes are included here;
- Organizational Culture and Relationships: The “WE” quadrant. This is the internal and collective aspects, normally expressing the culture and other collective mechanisms.

Appendix B. Detailed Definitions of the Dimensions of the Model

This is the list of elements of the nine-dimensional synthesis model. The first abbreviated version can be found in Section 3.1 of the paper. The details and rationale for defining these dimensions can be found here:

Appendix B.1. People

People refer to individuals within the organization, encompassing aspects such as the selection, development of their professional career, how they relate to each other, how they are rewarded, how they are considered, or how their performance is evaluated.

A company's level of agility is directly correlated with how the business identifies and develops the potential of its people. The underlying capabilities of agility (responsiveness, versatility, flexibility, resilience, innovativeness, and adaptability) are effective and sustainable only when all people, and not just leaders, are able to unlock and utilize their potential to create and deliver valuable outcomes to satisfy customers (Mundra, 2018).

This dimension is frequently mentioned explicitly in several of the models analyzed (see Table 3) although sometimes it appears embedded in others, such as leadership or culture. The fact that agile transformation affects the entire organization in order to apply agility at scale (D. K. Rigby et al., 2018) has a significant impact on all employees.

The "People" dimension is based on teamwork, but with distinctive characteristics. The process of developing new products, as described in (Takeuchi & Nonaka, 1986), is an iterative one. It is a holistic approach with six characteristics, one of which is "self-organizing project teams".

The Law of the Small Team (Denning, 2018) is a good summary of this. According to this law, common practices of agile small teams are the following: working in small batches; small cross-functional teams; limited work in process; autonomous teams; achieving the "done" part; working without interruption; daily standups; radical transparency; customer feedback in each cycle; and retrospective reviews.

In an agile team, the composition of the team had much less to do with team performance than with five key dynamics that are supported by agile management practices: psychological safety, dependability, structure and clarity, meaning of work, and impact of work.

Related to people, there are several inhibitors and enablers (Mundra, 2018) to agility. Inhibitors would be a mechanistic view of people, a lack of trust, blaming people, the feeling of "being used", a lack of appreciation, the "that's not my job" attitude and the "yes boss" mindset, competition among individuals, differential treatment for contractual employees, and "forcing" people to become managers.

On the other hand, the list of enablers include psychological safety, competency-driven people development, intrinsic motivation (Pink, 2009) engagement, ability to have fun at work, hiring for diversity, holistic and frequent feedback for performance, and learning culture.

It should be noted that certain aspects of the "People" dimension are closely inter-related with other dimensions. For instance, work supported in small teams has points of contact with the "Organization", "Processes", or "Leadership" dimensions. This is a common occurrence with several of the techniques, practices, methods, and frameworks involved, as they often affect multiple dimensions. The adaptive nature of business agility will result in new techniques and practices permeating the "permeable borders" of the different dimensions in the future. Another related dimension is culture, which can be fostered by cultivating an enterprise growth mindset, and embracing diversity (Hesselberg, 2018).

Appendix B.2. Culture

The idea of cultural change as a basic element of business agility is quite widespread (see Table 3).

An agile culture is built on the principle of putting people at the center of the organization. It empowers and engages them to work collaboratively and effectively, enabling

them to create value swiftly and fostering a productive and innovative work environment (Aghina et al., 2018).

An agile culture is a continuous learning culture (Scaled Agile Framework, 2023) that prioritizes ongoing improvement of knowledge, competence, performance, and innovation.

The transformation into a learning organization requires five core disciplines (Senge, 1990): personal mastery; shared vision; team learning; mental models and systems thinking.

This approach involves modifying the leadership style to provide employees with the autonomy and motivation to drive the organization towards its stated purpose and vision. This fosters a culture of innovation and collaboration, which ultimately contributes to the organization's success (Aghina et al., 2018).

Some authors associate culture with the scale of consciousness as defined by F. Laloux (Laloux, 2014). The culture has different characteristics according to the level (Leopold, 2020) or the holon (Spayd & Madore, 2020).

An agile culture has many points of contact with the behaviors exhibited in emerging organizations such as startups. These include an entrepreneurial drive, taking ownership of team goals, decisions, and performance, and people proactively identifying and pursuing opportunities to develop new initiatives, knowledge, and skills in their daily work (Aghina et al., 2018).

Appendix B.3. Leadership

Leadership is a key element, with a great influence on the transformation processes, particularly in the context of an "Agile leadership" approach (Hayward, 2021). Leadership is mentioned as a key element in several models (see Table 3).

This is a critical factor for several authors in successful agile transformations (Spayd & Madore, 2020), even when the focus is typically on organizations or processes.

An agile leader is regarded as both an enabler and a disruptor (Hayward, 2021). In their role as an enabler, he or she provides a clear sense of purpose and direction, fosters a secure work environment, cultivates trust, serves as a coach for improvement, and embraces a collaborative approach. As a disruptor, the agile leader is closely connected to customers, prioritizes ruthlessly, challenges the status quo, and is bold and determined.

As organizations flatten and delegate greater accountability, authority, and autonomy to the workforce, the role of people managers (as distinct from process managers) becomes increasingly important. They serve as coaches and mentors to their workforce, energizing people, removing impediments, resolving conflicts, and communicating the corporate vision. The culture of the organization lives through them (Sidky et al., 2024).

The agile leader defines a context that makes it possible for employees to learn by performing tasks by themselves, by treating them as adults that do not require continuous supervision. This is not a spontaneous process; it requires building trust on both sides over time (D. Rigby et al., 2020).

Agile leaders can facilitate transformation, encourage new behaviors, define vision, and create a safe environment for experimentation and learning by effectively delegating and empowering people (D. Rigby et al., 2020). The actions of the leader are critical to the success of agile transformations. They are instrumental in developing an agile organization by providing (Hayward, 2021) the following:

- Cultural or psychological safety that gives people the confidence to act;
- Clarity of vision, roles, and expectations that frees people to focus and deliver;
- Closeness to the customer that accelerates relevant innovation;
- Collaboration and teamwork that drive output and performance improvement.

Appendix B.4. Strategy

The strategy defines several key aspects for an organization. It is derived from the organization's mission and vision and defines the means of aligning the organization with the objective of achieving them.

An agile organization, with a distributed value creation model, must establish a shared purpose and vision for the organization that helps people feel personally and emotionally invested (Aghina et al., 2018). This shared purpose and vision serve as the reference for all parties involved in the organization's operations.

This is the reason why organizations need to introduce mechanisms that help create focus and alignment (Doerr, 2018), cocreating value with and for all their stakeholders (Aghina et al., 2018). This requires clear communication of an adaptive and sustainable strategy. Such a strategy empowers teams to identify opportunities to execute tasks in potentially innovative and previously unforeseen ways (Sidky et al., 2024).

Agile strategy implies an agile way of planning, budgeting, and reviewing that relays frequent reviews and empirical data to determine whether to review or adjust the plans. Planning, budgeting, and reviewing work together in iterative feedback loops, mirroring the collaborative nature of an agile team (D. Rigby et al., 2020). Agile leaders' responsibilities regarding strategy include clearly communicating it in a transparent way to help alignment (Sidky et al., 2024).

The right cadence for the planning, budgeting, and reviewing cycle depends on the organization, and particularly on where the balance lies between stability and innovation. A cycle that is too slow can result in stagnation or the misallocation of resources. A cycle that is too fast can result in the creation of unnecessary work and confusion within the operational framework (D. Rigby et al., 2020).

Appendix B.5. Governance

Governance is mentioned in several models (see Table 3). It refers to the process of aligning the organization's resources and capabilities with its highest-priority objectives and initiatives, with the aim of delivering maximum value outcomes for stakeholders (Mundra, 2018).

This is typically established by a board of directors or an equivalent governing body. As an agile governance structure, it holds the organization accountable for business outcomes, rather than solely focusing on outputs. It fosters an environment for conducting and learning from experiments and market research. Additionally, it supports the CEO in making decisions that benefit the customer, even if they have a short-term impact on shareholders (Sidky et al., 2024). One key aspect is the setting of metrics, particularly outcomes metrics, which provide focus and alignment (Doerr, 2018; Hellesoe & Mewes, 2020).

The agile governance approach involves fostering hands-on governance by decentralizing cross-team performance management and decision-making rights across organizational boundaries (Spayd & Madore, 2020). This approach encourages the delegation and distribution of decision-making, freeing senior leadership to concentrate on the overall system design and provide guidance and support to responsible, empowered teams engaged in day-to-day activities (Aghina et al., 2018).

A shift in mindset is taking place (Aghina et al., 2018). The traditional approach, which involves directing and managing people to prevent chaos, is being replaced by a more nuanced understanding. This new perspective acknowledges that when individuals are given clear responsibility and authority, they are highly engaged and take care of each other. This leads to ingenious solutions and exceptional results.

There are a series of inhibitors and enhancers of agile governance (Mundra, 2018).

The inhibitors include the following: optimization of silos; relying on misleading and non-actionable metrics; watermelon metrics (metrics that superficially mask the grim realities); vanity metrics; lagging indicators; metrics that drive wrong behaviors; sunk cost fallacy; speed at the cost of quality; governing for compliance and documentation; projects/initiatives delinked from strategy; and the “Frozen middle” layer of management.

On the other hand, enablers include the following: value-driven prioritization; continuous validation of value; incremental funding; balancing of leading and lagging indicators; attending showcases/demos; and end-to-end links between purpose and initiatives.

Appendix B.6. Organization

With leadership, organization is the dimension with more references among models (see Table 3).

Organizational design refers to the structures, hierarchies, or internal mechanisms an organization uses to deliver value. An agile organizational design is dynamic, flexible, and prioritizes customer value over resources or leadership control, both in the present and future (Hesselberg, 2018).

An agile organization is a network of empowered teams, representing a shift away from hierarchical and rigid machine-like structures towards more fluid structures, resembling biological organisms. Similarly to cells in an organism, the basic building blocks of agile organizations are small, fit-for-purpose performance cells (Aghina et al., 2018).

Denning’s Law of the Network (Denning, 2018) defines the organization as a network.

In agile organizations, breaking silos is a key focus. Agile teams, unlike specialized and isolated departments, have greater autonomy, accountability, and multidisciplinary capabilities. They are quickly formed and dissolved, with a clear focus on specific value-creating activities and performance outcomes (Aghina et al., 2018). These teams are optimized for value delivery and flow efficiency (Vacanti, 2020).

As organization is one of the most common dimensions in the models analyzed, it is also covered from a variety of different perspectives. For instance, a distinctive agile physical workplace design (Hesselberg, 2018) is one such example. This design provides effective focus space and opportunities for communication and collaboration.

It is important to note that the majority of agile frameworks, practices, and methods (Scrum, Kanban, DSDM, SAFe, LeSS, etc.) are defined in terms of how they structure organizations with the aim of increasing value delivery. For this reason, organizational design is a topic extensively covered in the literature and represents a fertile area for experimentation, including the exploration of alternative structures such as Sociocracy (Endenburg, 1998), Holacracy (Robertson, 2015), and Teal organizations, which represent the pinnacle of organizational “consciousness” (according to (Laloux, 2014)).

Appendix B.7. Processes

These refer to the kind of processes needed to implement agility in the organization.

A process is a series of coordinated activities with the objective of achieving a specific outcome (Mundra, 2018). This implies that every activity within an organization can be defined as a process, with inputs, actions, and outputs.

Most of the agile frameworks, methods, and practices are intended to redefine organization and processes, normally for teams but, as mentioned earlier, also at scale (several teams and the whole organization). Agility was born as a way to offer “light” methods in contrast with the heavy-weight methodologies of their time (Doerr, 2018).

One of the hallmarks of agility is its ability to structure work in rapid cycles of thinking and doing (Spayd & Madore, 2020), enabling experimentation and customer feedback integration. This way of working can be implemented at any level of the organization,

from short-term projects to quarterly cycles that define objectives and outcomes (Hellesoe & Mewes, 2020), or even rolling budgeting (Bogsnes, 2016) for the entire organization.

Other common characteristics of agile processes include *Scaled Agile Framework* (2023):

- Work in short iterations, or no iterations at all (as in Kanban);
- Break work into small batches managed in ordered backlogs;
- Collective planning exercises;
- Frequent points of synchronization among the people involved in the work;
- Use of mechanisms that foster transparency and communication;
- Events and mechanisms to collect feedback from users, clients, and stakeholders;
- Participative ways to periodically (and frequently) improve the process.

Agility can be inhibited from the processes dimension by (Mundra, 2018) applying and not improving broken processes; using processes not being aligned with the company's purpose/outcomes, or not being fit for purpose; applying rigid processes without providing means to improve them; striving for 100% resource utilization, instead of improving flow; and carrying out estimation and capacity planning performed by managers and not by the people directly involved in the work.

Appendix B.8. Delivery

Delivery, especially of products or services with technological components, is usually the starting point for agility adoption. It is a dimension related to processes and organization.

Agile product delivery is a customer-centric approach to defining, building, and continuously releasing valuable products and services to customers and users, as defined by the *Scaled Agile Framework* (2023). Delivery is how organizations conceive and put their products and services into the hands of their users and clients. Agile delivery methods vary, particularly in the realm of technological products and services.

Delivery encompasses the totality of the product or service lifecycle, from inception to handover and ongoing operation. This encompasses the specification, development, deployment, operation, and evolution of products and services (*Scaled Agile Framework*, 2023).

To do this, a continuous process of definition (and refinement of this definition), construction, and deployment of the solution (product or service) must be designed and implemented. Delivery works in two directions: it transforms needs and ideas into actual solutions, and it collects feedback—qualitative and quantitative—to inform future activities.

When talking about technological products and services, agile delivery has a strong relationship with DevOps techniques. DevOps was born out of the need to reduce friction between development and operations teams in organizations. Over time, it has evolved into a philosophy and set of techniques that optimize the flow of value and feedback within organizations, increasing adaptability and sustainability.

Organizations that adopt agility encounter challenges when collaborating with external partners. This underscores the need for new approaches to defining and managing relationships with third parties. Business agility demands partnerships that prioritize flexibility and customer value, enabling both the organization and its partners to adapt in a coordinated and complementary manner, moving away from rigid contractual transactions (Sidky et al., 2024). This necessitates the adoption of agile procurement, the development of agile contracts, and the definition of partner onboarding processes.

Appendix B.9. Technology

Technology plays a central role in most organizations that need it to reach their customers. The view that technology is a critical dimension of business agility is gaining acceptance (Andreessen, 2011). This represents a shift in perspective, moving technology

from a supporting capability to a core aspect of the organization. This allows for quick responses to business and stakeholder needs (Aghina et al., 2018).

For many organizations, a radical rethinking of the organizational model necessitates a rethinking of the technologies underlying and enabling their products and processes, as well as the technological practices needed to support speed and flexibility (Jadoul et al., 2011).

Technology is a key enabler for achieving the three core objectives of Build the Right Thing (from the customer's perspective), Build the Thing Right (in terms of quality), and, above all, Build at the Right Speed (Hesselberg, 2018). It is not simply a matter of leveraging automation to reduce effort and accelerate processes. Technology is also a means of obtaining early feedback and establishing a consistent approach.

While technology has typically played a supporting role, one of the key changes driving business agility is to enhance collaboration between business and technology teams. This approach aims to differentiate the organization through technology and to make technology a central focus within the company (Mundra, 2018), bringing the benefits of concepts created in software engineering to the entire organization.

To take full advantage of the possibilities of technology, organizations need to take actions (D. Rigby et al., 2020; Jadoul et al., 2011) like breaking silos and excessive specialization in favor of cross-functional teams; implementing modular architectures, leaving behind monolithic IT; reducing outsourcing and moving to a strategic IT hiring balanced with partners and vendors; introducing continuous delivery; improving engineering practices; taking advantage of virtualization and cloud; or moving to DevOps or DevSecOps.

The configuration and distribution of teams exert a considerable impact on technological development (Skelton & Pais, 2019), consequently influencing the efficiency and customer centricity of the delivery process.

Appendix B.10. Customer

Finally, two additional transversal dimensions are added to this synthesis.

It is noteworthy that this dimension is not explicitly mentioned in many models (see Table 3). However, it is widely regarded as the central focus of business agility, driving and underpinning the entire business operations (Mundra, 2018). Consequently, it is a distinctive, cross-functional dimension that, in some models, is regarded as the core around which all transformation activities revolve (Sidky et al., 2024). It is also seen as the rationale and objective of business agility development.

The term “customer” has several meanings, depending on the organizational context (Sidky et al., 2024). It can refer to a paying client in the private sector, a citizen in the public sector, or an abstraction, such as “the environment” or “the community”, in the case of an NPO (non-profit organization). In an organizational setting, a customer may also be a distinct division or employees.

In essence, the purpose of any organization is to serve its customers. A company's primary objective is to generate profit in order to sustain its operations and continue achieving its purpose. “There is only one valid definition of business purpose: to create a customer . . . What the customer thinks he is buying, what he considers ‘value,’ is decisive—it determines what a business is, what it produces and whether it will prosper” (Drucker, 1954). The customer's perception of value is crucial, as it directly influences the nature of the business, its products or services, and its overall success.

This customer centricity is sometimes seen as relevant in that, for some authors, the customer replaces the shareholder, changing the orientation of the organization towards creating value instead of extracting value (Denning, 2018).

Customer centricity is a mindset (Scaled Agile Framework, 2023) and a way of performing tasks that prioritizes the customer. It involves focusing on the customer, understanding their needs, considering their perspective, and recognizing their lifetime value.

There are several ways to enhance business agility with customer centricity. These include (Mundra, 2018; Sidky et al., 2024) developing customer journeys, developing a customer-first culture, and understanding what value means to the customer.

On the other hand, certain inhibitors that impede a customer-centric mindset (Mundra, 2018) include taking customers for granted, making assumptions about customer needs and preferences, or ignoring end users.

Appendix B.11. Transformation

While customer centricity is often seen as the foundation of business agility in various models, transformation is rarely explicitly addressed (PMI, 2022; Agility Health, 2024) and, actually, (Scaled Agile Framework, 2023) because it is centered on the transformation process). This is despite transformation being the driving force behind the models themselves.

As previously stated, agile transformation is a continuous process with an ongoing starting point. This is because transformation inherently involves adapting to change, so organizations must continue to adapt until (in an unlikely scenario) change finally ends.

Transformation is a transversal dimension that affects and is affected by all other dimensions. To achieve a continuous state of business agility, it is essential to develop transformation in the nine dimensions.

Agile transformation defines the mechanisms, practices, techniques, and tools that facilitate the transition “from a bureaucracy to a network” (Denning, 2018). Organizations have three alternatives to develop this transformation process:

- Top-down big-bang: This is seen as a risky source of trouble that rarely works (Denning, 2018);
- Gradualist bottom-up: Working step-by-step;
- A combination of top-down and bottom-up: The preferred option for the different authors analyzed.

The organizations that are cited as examples of success in their transformation (Sommer, 2019; Hesselberg, 2018; D. Rigby et al., 2020; Spayd & Madore, 2020; Harbott, 2021) demonstrate a variety of actions across the different dimensions (Denning, 2015).

References

- Abdul Wahab, A. M., Dorasamy, M., & Ahmad, A. A. (2024). Product team in transition: A qualitative case study of team motivation and collaboration during agile adaptation. *International Journal of Management, Finance and Accounting*, 5(2), 50–74. [CrossRef]
- Aghina, W., Ahlback, K., De Smet, A., Lackey, G., Lurie, M., Murarka, M., & Handscomb, C. (2018, January 22). The 5 trademarks of agile organizations. *McKinsey*. Available online: <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/the-five-trademarks-of-agile-organizations#/> (accessed on 9 July 2024).
- Agile Business Consortium. (2024). *What is business agility?* Available online: <https://www.agilebusiness.org/business-agility.html> (accessed on 9 July 2024).
- Agility Health. (2024). *Enterprise business agility strategy model*. Agility Health.
- Alvarez, A., & Bordel, B. (2024). How software engineering transforms organizations: An open and qualitative study on the organizational objectives and motivations in agile transformations. *Computers, Materials & Continua*, 81(2), 2935–2966. [CrossRef]
- Andreessen, M. (2011). Why software is eating the world. 20.2011 (2011): C2. *Wall Street Journal*, 20. Available online: <https://www.wsj.com/articles/SB10001424053111903480904576512250915629460> (accessed on 12 July 2024).
- Barnard, L. (2024, October 29). 5 reasons why Agile transformation fails. *CIO*. Available online: <https://www.cio.com/article/3549828/5-reasons-why-agile-transformation-fails.html> (accessed on 8 October 2024).
- Beck, K., Cockburn, A., Jeffries, R., & Highsmith, J. (2001). *Agile manifesto*. Available online: <https://agilemanifesto.org/> (accessed on 10 March 2024).
- Berger, J. G. (2019). *Unlocking leadership mindtraps: How to thrive in complexity*. Stanford Briefs.

- Bogsnes, B. (2016). Beyond Budgeting. In *Implementing beyond budgeting* (pp. 55–90). Wiley. [CrossRef]
- Carroll, N., Conboy, K., & Wang, X. (2023). From transformation to normalisation: An exploratory study of a large-scale agile transformation. *Journal of Information Technology*, 38(3), 267–303. [CrossRef]
- Denning, S. (2015, October 27). Surprise: Microsoft is agile. *Forbes*. Available online: <https://www.forbes.com/sites/stevedenning/2015/10/27/surprise-microsoft-is-agile/> (accessed on 12 July 2024).
- Denning, S. (2018). *The age of agile: How smart companies are transforming the way work gets done*. Amacom.
- Dikert, K., Paasivaara, M., & Lassenius, C. (2016). Challenges and success factors for large-scale agile transformations: A systematic literature review. *Journal of Systems and Software*, 119, 87–108. [CrossRef]
- Doerr, J. (2018). *Measure what matters: The simple idea that drives 10x growth*. Penguin UK.
- Drucker, P. (1954). *The practice of management*. Routledge.
- Endenburg, G. (1998). *Sociocracy as social design: Rationale of a new social design for society*. Sociocratic Engineering Company.
- Goh, Z., & Mundra, S. (2024). *Evolvability in business*. Routledge.
- Grass, A., Backmann, J., & Hoegl, M. (2020). From empowerment dynamics to team adaptability: Exploring and conceptualizing the continuous agile team innovation process. *Journal of Product Innovation Management*, 37(4), 324–351. [CrossRef]
- Gwangwadza, A., & Hanslo, R. (2024). Identification and prioritization of success factors in agile software development in the south african software development industry. *IEEE Engineering Management Review*, 1–29. [CrossRef]
- Harbott, K. (2021). *The 6 enablers of business agility: How to thrive in an uncertain world*. Berrett-Koehler Publishers.
- Hayward, S. (2021). *The agile leader: How to create an agile business in the digital age*. Kogan Page Publishers.
- Hellesoe, N., & Mewes, S. (2020). *OKRs at the center: How to use goals to drive ongoing change and create the organization you want*. Independently published.
- Hesselberg, J. (2018). *Unlocking agility: An insider's guide to agile enterprise transformation*. Addison-Wesley Professional.
- Jadoul, Q., Róna, D., Storozhev, A., & Sukharevsky, A. (2011). *The five core IT shifts of scaled agile organizations*. McKinsey & Company. Available online: <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/the-five-core-it-shifts-of-scaled-agile-organizations> (accessed on 12 July 2024).
- Kaya, Y. (2023). Agile leadership from the perspective of dynamic capabilities and creating value. *Sustainability*, 15(21), 15253. [CrossRef]
- Kotter, J. P., & Cohen, D. S. (2012). *The heart of change: Real-life stories of how people change their organizations*. Editorial Harvard Business Review Press.
- Laanti, M. (2017). *Agile transformation model for large software development organizations*. ACM International Conference Proceeding Series, Part F129907. Association for Computing Machinery. [CrossRef]
- Laanti, M., Salo, O., & Abrahamsson, P. (2011). Agile methods rapidly replacing traditional methods at Nokia: A survey of opinions on agile transformation. *Information and Software Technology*, 53(3), 276–290. [CrossRef]
- Laloux, F. (2014). *Reinventing organizations*. Nelson Parker.
- Leffingwell, D. (2007). *Scaling software agility: Best practices for large enterprises*. Addison-Wesley Professional.
- Leopold, K. (2020). *Rethinking agile: Why agile teams have nothing to do with business agility*. Findaway World.
- Leybourn, E. (2013). *Directing the agile organisation: A lean approach to business management*. IT Governance Ltd. Available online: <https://agilityhealthradar.com/enterprise-business-agility-model/> (accessed on 9 July 2024).
- Leybourn, E. (2016, November 24). *Domains of agility*. The Agile Director. Available online: <http://theagiledirector.com/article/2016/11/24/domains-of-agility/> (accessed on 9 July 2024).
- Mundra, S. (2018). *Enterprise agility: Being agile in a changing world*. Packt Publishing.
- Odilov, S. (2024, December). Is agility overrated in leading transformations? *Forbes*. Available online: <https://www.forbes.com/sites/sherzododilov/2024/12/03/is-agility-overrated-in-leading-transformations/#:~:text=According%20to%20Scrum%20Inc.,%20nearly,the%20performance%20improvements%20they%20promise> (accessed on 30 January 2025).
- Paasivaara, M. (2017, May 22–23). *Adopting SAFe to scale agile in a globally distributed organization* [Conference session]. 2017 IEEE 12th International Conference on Global Software Engineering, ICGSE 2017 (pp. 36–40), Buenos Aires, Argentina. [CrossRef]
- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *BMJ*, n160. [CrossRef]
- Pink, D. (2009). *Drive: The surprising truth about what motivates us*. Riverhead Books.
- PMI. (2022). *The disciplined agile® enterprise (DAE)*. Available online: <https://www.pmi.org/disciplined-agile/process/dae> (accessed on 9 July 2024).
- Rigby, D., Elk, S., & Berez, S. (2020). *Doing agile right*. Harvard Business Review Press.
- Rigby, D. K., Sutherland, J., & Noble, A. (2018). Agile at scale. *Harvard Business Review*, 96(3), 88–96.
- Robertson, B. J. (2015). *Holacracy: The new management system for a rapidly changing world*. Henry Holt and Company.

- Robinson, H. (2019). *Why do most transformations fail?* Available online: <https://www.mckinsey.com/capabilities/transformation/our-insights/why-do-most-transformations-fail-a-conversation-with-harry-robinson> (accessed on 30 January 2025).
- Scaled Agile Framework. (2023). *Business agility*. Available online: <https://scaledagileframework.com/business-agility/> (accessed on 9 July 2024).
- Senge, P. (1990). *The fifth discipline. The art & practice of learning organization*. Doubleday Currence.
- Sidky, A., Leybourn, E., & Powers, L. (2024). *Domains of business agility*. The Business Agility Institute. Available online: <https://businessagility.institute/domains/overview> (accessed on 9 July 2024).
- Skelton, M., & Pais, M. (2019). *Team topologies: Organizing business and technology teams for fast flow*. It Revolution.
- Sommer, A. F. (2019). Agile transformation at LEGO group: Implementing Agile methods in multiple departments changed not only processes but also employees' behavior and mindset. *Research Technology Management*, 62(5), 20–29. [CrossRef]
- Spayd, M. K., & Madore, M. (2020). *Agile transformation: Using the integral agile transformation framework to think and lead differently*. Addison-Wesley Professional.
- Späth, C., & Westner, M. (2024, October 3–5). *Challenges in agile transformations: A comprehensive review* [Conference session]. Mediterranean Conference on Information Systems (MCIS), Porto, Portugal.
- Takeuchi, H., & Nonaka, I. (1986). The new new product development game. *Harvard Business Review*, 64(1), 137–146.
- Taleb, N. N. (2012). *Antifragile: Things that gain from disorder*. Penguin Books.
- Vacanti, D. (2020). *Kanban guide*. Kanbanguides. Available online: <https://kanbanguides.org/wp-content/uploads/2021/01/Kanban-Guide-2020-12.pdf> (accessed on 12 July 2024).
- Verwijs, C., & Russo, D. (2023). A theory of scrum team effectiveness. *ACM Transactions on Software Engineering and Methodology*, 32, 74.
- Wilber, K. (2001). *Sex, ecology, spirituality: The spirit of evolution*. Shambhala Publications.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.