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Public Administration's Dynamic Capabilities in Response to Covid-19 Pandemic – AMA's Case Study

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BUSINESS
SCHOOL

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*"Do I dare
Disturb the universe?"*

T. S. Eliot

Resumo

O presente estudo pretende contribuir para a investigação acerca de como pode o setor público utilizar capacidades dinâmicas para fazer face aos desafios ambientais e melhorar a sua performance, apresentando o caso da Agência para a Modernização Administrativa (AMA).

Alterações no ambiente externo das organizações podem alavancar as suas capacidades dinâmicas. A pandemia do novo coronavírus, Covid-19, emergiu em março de 2020 e provocou alterações impactantes no ambiente externo da AMA. A resposta da organização à pandemia envolveu iniciativas, atividades e adaptações. De forma a reconhecer nesta resposta as capacidades dinâmicas da organização, recolheram-se dados através da observação da resposta da AMA à pandemia e do cruzamento das respostas de 8 diretores e chefes de equipa a uma entrevista. Analisaram-se os resultados à luz da teoria existente acerca de capacidades dinâmicas, com especial foco no que toca às três componentes propostas por Wang e Ahmed em 2007 - capacidade de Adaptação, capacidade de Absorção e capacidade de Inovação.

Os resultados demonstram que as três componentes das capacidades dinâmicas são evidentes na AMA e que a resposta da organização para lidar com a pandemia foi bem-sucedida na criação de valor para o cidadão e no cumprimento das diretrizes do governo. Por fim, conclui-se que desenvolver capacidades dinâmicas pode ser uma abordagem estratégica a ser considerada como forma de maximizar o desempenho organizacional e que mais pesquisas devem ser realizadas neste contexto, pois é possível para uma organização pública fortalecer e utilizar capacidades dinâmicas.

Palavras-chave: capacidades dinâmicas, administração pública, modernização administrativa, Covid-19

Abstract

The present study intends to contribute to the investigation about how public organizations can use their dynamic capabilities to face environmental challenges and improve their performance, by presenting the case of the Portuguese Agency for Administrative Modernization (AMA).

Changes in the external environment of organizations can leverage their dynamic capabilities. The pandemic of the new coronavirus, Covid-19, emerged in March 2020 and caused impactful changes in the external environment of AMA. The organization's response to the pandemic involved initiatives, activities, and adaptations. To identify Dynamic Capabilities in this response, data collection was performed through observation and through an interview carried out to 8 directors and team leaders. The results were analyzed in the light of the existing theory about dynamic capabilities, with a special focus on the three components proposed by Wang and Ahmed in 2007 – Adaptive capability, Absorption capability and Innovation capability.

The results demonstrate that the three components of dynamic capabilities are evident at AMA and that the response the organization had to deal with the pandemic was successful in creating value for the citizen and in corresponding to the government guidelines. Finally, it is concluded that developing dynamic capabilities can be a strategic approach to take into account as a way to maximize organizational performance and that more research must be carried out in this context, as it is possible for a public organization to strengthen and use dynamic capabilities.

Keywords: dynamic capabilities, public administration, administrative modernization, Covid-19

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I dedicate this case study to my grandfather. Since he left my life has been full of challenges, achievements, and personal growth, and I am sorry that I cannot share my joy with him, in particular the joy of finishing a very remarkable chapter in my life, which is my master's degree. I will always imagine how it would be if he was here.

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List of Abbreviations

VUCA – Volatility, uncertainty, complexity and ambiguity

AMA – Agency for Administrative Modernization

RBV – Resource-based View

DC – Dynamic Capabilities

1. Introduction

The year 2020 began with an unexpected pandemic that affected all areas of the world and life itself, originating big challenges for organizations. Business articles frequently include an observation about how VUCA the business environment is, but as it happened on September 11, 2001, when that notion was widespread (Lawrence, 2013), the Covid-19 came up as a reassurance of what the acronym really means, in all its fullness: volatility, uncertainty, complexity and ambiguity.

The Administrative Modernization Agency (hereinafter referred to as “AMA”) is the public institute responsible for promoting and developing administrative modernization in Portugal. Covid-19 presented itself as a challenge for AMA to react using its dynamic capabilities. AMA developed important initiatives and activities during and in response to the pandemic, naturally under the guidelines of the Minister of State Modernization and Public Administration. The most important, both internal and external (for the organization itself or for the citizen) were closely monitored by management, and some of them will be presented in this case study.

The present case study seeks to answer the main research question “How can public organizations face environment challenges through dynamic capabilities?”, by presenting AMA’s case.

The objective of this research is to characterize dynamic capabilities in a public organization which responded to an environmental challenge.

The implications of this study are both theoretical and managerial. Theoretical because this study furthers the previous research about the existence of dynamic capabilities in the public sector - dynamic capabilities are a trending topic in management research, but most research is held focusing the private sector. The managerial implications are that the present case study can provide important insights into how a public entity can develop dynamic capabilities and why do dynamic capabilities represent an advantage when delivering a quality service while facing an environmental change.

The relevance of the research question “How can public organizations face environment challenges through dynamic capabilities?” originated the interest in writing this dissertation. The research question came up naturally while AMA’s management performed the monitorization of AMA’s initiatives and activities since the beginning of the pandemic and in direct response to it.

It is a relevant research question because public administration is held to be “sluggish, rigid, rule bound, centralized, insular, self-protective, and profoundly antidemocratic”, as stated by Lynn Jr. (2001), and these characteristics do not allow the development of dynamic capabilities. Another relevant point is that the concept of dynamic capabilities is associated with competitive advantage, but for AMA, as a public institute, competitiveness does not have the same meaning as for a private organization. A public institute exists to meet the needs of particular client groups rather than achieve profits (Collins, 2005). Then, competitiveness exists to the extent that the quality of the service that meets those needs can be compared to the one provided by similar entities of other countries, or between public entities of the same country, or to previous service quality of the entity itself.

As for the document structure, this case study is structured in 6 chapters. After the present chapter which corresponds to an introductory section, the literature review for the development of the case is presented. The theoretical review is organized in 11 main topics: the state of art of public administration, the resource-based view, dynamic capabilities, the descriptions of adaptive capability, of absorptive capability and of innovative capability, the main research model used to discuss the case, the improvement capability, a topic about ambidexterity, the descriptions of sensing, seizing and transforming, and a literature review about dynamic capabilities in public organizations.

The third chapter explains the chosen methodology to develop the present case study. The fourth chapter corresponds to the Data Analysis, which is organized in 4 subchapters: the presentation of AMA – its attributions, organic structure and SWOT analysis –, the description of the environmental change that AMA faced, and both the results of the observation and the interview performed for data collection. The fifth chapter consists in the discussion and findings. The sixth chapter consists in the conclusion, in which besides the main conclusions the limitations are several suggestions for future research are presented. Lastly, the references

used in the case study are presented and in the section of annexes AMA's organic structure can be found, as well as the SWOT analysis and the interview guidelines used.

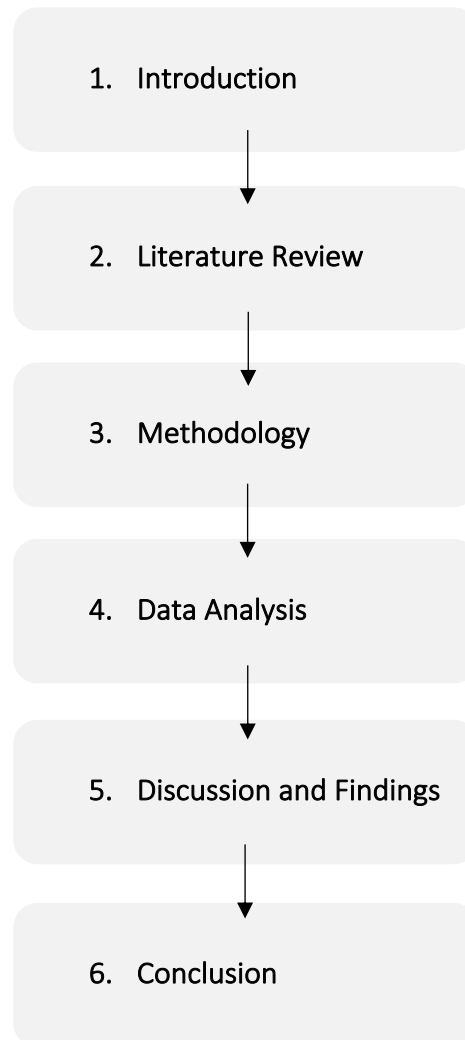


Figure 1 - Case Study Structure. Source: the author

2. Literature Review

In this chapter, the key aspects for the development of the analysis of AMA's case are addressed and will also guide the reader on the subjects covered.

2.1. *Public Administration*

Public organizations that work as open systems interact with the environment, operating in conjunction to it. Interaction between the organization and its environment happens because of the assumption that the impact of the environment on organizations is much greater than the impact of the organizations on the environment (Szymaniec-Mlicka, 2015). Related to this, and according to Christensen and Lægreid (2011), public organizations are trying to respond to several demands at the same time, which in turn makes them become increasingly complex.

For the past decades, many governments have been concerned about reforming public service (Rhodes, 2016). Bryson *et al.* (2014) compared three perspectives on public administration: traditional public administration, new public management and the emerging approach to public administration, the last with a great emphasis on collaborative governance and public values. Collaborative governance differs from traditional bureaucratic approaches to government and is characterized by the engagement of nonstate stakeholders in public service and by a greater proximity between the public, the private, and the nonprofit sectors (Ansell & Gash, 2008; McGuire, 2006).

While for traditional public administration the role of citizenship is of a voter, client or constituent, for new public management the citizen is a customer, and in the emerging approach the citizens are seen as problem-solvers and co-creators, engaged in creating value (Bryson *et al.*, 2014).

The key objectives of traditional public administration are politically provided, managed by public servants, and monitored bureaucratically. For new public management, the key objectives are as well politically provided although managers inputs and outputs in a way that

ensures responsiveness to consumers, while in the new approach the key objective is to create public value, address public cares and put in place what is good for the public (Bryson *et al.*, 2014).

Another relevant difference is on the key values for the three perspectives: efficiency is the key value for traditional public administration, while for new public management there are two, efficiency and effectiveness, and in the new approach it is added the full range of democratic and constitutional values (Bryson *et al.*, 2014).

The mechanisms for achieving policy objectives are also distinguished. Traditional public administration administers programs through centralized, hierarchically organized public agencies, while new public management creates mechanisms and incentive structures, mostly through the use of markets, to achieve policy objectives. The emerging approach implies selecting delivery mechanisms based on pragmatic criteria, engaging citizens to achieve agreed objectives and focusing on collaboration (Denhardt & Denhardt, 2015).

The emerging approach can be defined as “*new public service*” and its ideas and practices have become increasingly evident in public administration scholarship and practice (Denhardt & Denhardt, 2015).

The changes are notorious and reflect that public administration thinking and practice “*have always responded to new challenges and the shortcomings of what came before*” (Peters & Pierre, 1998). Rhodes (2016) also stated that the essence of public servants is the ability to learn from experience and to change the set of skills to fit the specific context in which they work. Public servants work in the context of competing values in a complex and rapidly changing environment (Denhardt & Denhardt, 2015).

In 2010, Poister reflected about the criticality of transitioning to strategic management over the next ten years given the rapid changes and increased uncertainties. The management of public organizations has been originating a greater interest in researchers because of the growing importance of the public sector for socio-economic development of the country, and strategic management is one of the important areas of research, especially considering an increasingly dynamic environment. The resource-based view (RBV) is one of the proposed

solutions for improving strategic management efficiency, focusing on resources and capabilities that can meet the emerging challenges (Szymaniec-Mlicka, 2015)

Szymaniec-Mlicka (2015) defended that instead of considering a specific resource to be the key to success in a dynamic environment, the focus should be more on promoting the approach of the resource-based view in the organization as an effective strategy. This means that the organization should know its own resources and competences and combine those resources in a way that it would gain competitive advantage - the organization should be flexible (Krupski, 2008, as cited in Szymaniec-Mlicka, 2015).

2.2. Resource-based view

The concept of resource-based view was studied by Barney (1991) in order to overcome the limitations of competitive advantage models. An organization's resources are used to improve the organization's performance and are classified into three categories: physical capital resources, human capital resources, and organizational capital resources. The first group includes *“plant and equipment, technology, location and access to raw materials”*. The second group includes *“training, experience, judgment, intelligence, insight from managers and workers within the organization”*. The third group includes *“the formal structure of the organization, planning, controlling and coordinating systems, formal and informal reporting and planning systems, informal relations among groups with the organization and between external organizations in the competitive environment”* (Barney, 1991).

There are two types of resources: property-based and knowledge-based. While the first are more useful in a context of stability, knowledge-based resources are more used in contexts of uncertainty. According to the resource-based view, competitive advantage is a consequence of valuable, rare, imperfectly imitable and non-substitutable resources (VRIN) (Barney, 1991). VRIO contrasts with VRIN because it considers that it is through the firm's internal organization (O in VRIO) that resources are transformed into competitive advantage (Barney, 1997). In VRIN, the emphasis is on the resource level. In VRIO, the emphasis is on the usefulness and functionality of the resources (Cardeal & António, 2012).

Priem and Butler (2001), contradict a large part of RBV, stating that it does not explain how competitive advantage is achieved, emphasizing that different combinations of resources can generate the same value in companies, not allowing to achieve competitive advantage. Previously, the same consideration had been made in this regard by Barney, 1991, when it was said that even if a resource is valuable, rare and inimitable, if it is replaceable, it can never be a factor of competitive advantage for the company.

Resources are not the same as competences or capabilities. The access an organization has to resources and the ability it has to mobilize and combine these resources in specific ways determines its competence in a given product area (Teece, 2001). The value of resources in the context of dynamic markets tends to depreciate quickly (Collis & Montgomery, 2008), so resources cannot be a source of sustainable competitive advantage as much as capabilities are. Resources are still important because they are configured and combined with inside knowledge, to find solutions with the purpose of achieving strategic and operational objectives (Cardeal & António, 2012).

2.3. Dynamic Capabilities

As important as having useful resources is the possession of capabilities that allow the integration and use of these resources (Newbert, 2008). Thus, a capability can be seen as the “O” in VRIO, as the way the organization configures a bundle of resources (Cardeal & António, 2012). The literature about dynamic capabilities (DC) tries to explain how companies renew their existing capabilities and resources to adapt to the changing environment (Cardeal & António, 2012).

A capability is a set of activities the organization performs in a semi-routinized manner to enable a particular set of tasks to be accomplished in a way that allows products and services to be made and delivered and profits to be generated (Teece, 2006). Ordinary capabilities involve the performance of administrative, operational or governance-related functions that are necessary to complete tasks (Teece, 2006). In turn, dynamic capabilities are higher level activities that enable an enterprise to direct its activities towards producing goods and services in high demand or soon to be in high demand (Teece, 2006).

There has been an immense research effort on the topic of DC. It is a concept that has gained strength in recent years, being researched by many authors and in different aspects. The concept remains open to a variety of interpretations, for example how dynamic capabilities are defined, showing that there is no common understanding on the topic (Cardeal & António, 2012).

Teece *et al.* (1997) state that DC are the company's ability to integrate, build and reconfigure internal and external competences to deal with rapid environmental changes. Companies, in general, aim to profit, whatever it may be, and this can be achieved by an organization that has a good competitive advantage. The focus of DC is to get the firm to develop, or maintain, or further develop and maintain sustainable competitive advantage.

Helfat (1997) added that DC are the subset of capabilities that allow the company to create new products, processes and responses to changing circumstances in the market. Eisenhardt and Martin (2000) stated that Dynamic Capabilities represent the organizational routines and strategies by which companies reach new configurations of resources in markets that emerge, collide, evolve and die. Cockburn, Henderson and Stern (2000) defined it as a company's competitive advantage that is derived from the company's strategic response to changing environments or new information on opportunities. Another relevant contribution for the analysis of this case is the one by Griffith and Harvey (2001), that defined it as the creation of the difficulty of imitating the combination of resources, including effective coordination of interorganizational relationships, on a global basis that provides the company with a competitive advantage. Rindova and Kotha (2001) on their turn used the term "Continuous Morphing" to refer to profound transformations that take place within the company to change the dynamic adjustment between the company's resources and the external factors associated with a changing environment. Zollo and Winter (2002) define dynamic capabilities as a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness. By clearly distinguishing between dynamic capabilities and their effects (dynamic capabilities do not necessarily lead to improved performance), their definition has the advantage of not being tautological (Helfat *et al.*, 2007, as cited in Piening, 2011).

Wang and Ahmed (2007) defined DC as an organizations' behavior constantly oriented to integrate, reconfigure, renew and recreate its resources and capacities, and to update and reconstruct essential capacities in response to the changing environment to attain and sustain competitive advantage. Wang and Ahmed (2007), besides clarifying the concept of Dynamic Capabilities, also identified three component factors which reflect the common features of Dynamic Capabilities across firms: adaptive capacity, absorptive capacity and innovative capacity.

Dynamic capabilities also reflect past learning processes, because they are a learned pattern of collective activity through which the organization systematically generates and modifies its operational routines in pursuit of improved performance (Yang *et al.*, 2016).

There has been some disagreement between perspectives: perspectives that are based on Teece *et al.*'s (1997) definition view DC as capacities; those based on Eisenhardt and Martin (2000) view DC as routines (Yeow, 2018). However, Di Stefano *et al.* (2014) showed that the two views can be combined: Capacities are latent and can be observed only when they are implemented, that is, when routines are observable. Therefore, DC are seen as latent capacities, which are manifested in routines and their outcomes. Only through these routines, DC enable strategic renewal in a continuous and reliable way. Nonetheless, Teece *et al.*'s (1997) and Eisenhardt and Martin's (2000) views seem to diverge in more aspects: whether they regard DC as useful for organizations in highly dynamic environments, whether DC are a source of sustainable advantage, and whether DC are a source of competitive advantage (Yeow, 2018).

Although there are divergencies, researchers have proposed an integrative approach that attempts to reconcile these divergent views (Yeow, 2018), and that will be further described in the present literature review.

Teece (2018) identified interactions between business models and DC, the key point being that strong dynamic capabilities enable the creation and implementation of effective business models. The destabilizing effect of VUCA conditions often requires modifications to existing business models (Schoemaker, 2018). A good business model can free up resources that can be route toward developing future business and can help to achieve overall strategic priorities.

The strength of a firm's capabilities is demonstrated when business model changes are translated into organizational transformation (Teece, 2018).

Other conclusions by Teece (2018) are that good business model design requires a strong knowledge of customer needs and requires the technological and organizational resources that might meet those needs. Also, good business model reengineering skills are an important component of strong dynamic capabilities, as they enable successful seizing (Teece, 2018).

Schoemaker (2018) analyzed the importance of leadership for dynamic capabilities in relation to business model innovation. Performing successfully in a VUCA world requires business model innovation and adaptation guided by strong sensing and seizing capabilities. This is only possible through wise, committed leaders who know how to develop flexible organizational processes and when to do organizational transformations. Dynamic capabilities, business model renewal, and leadership have to be interconnected to produce the kind of product, service, process, that VUCA conditions demand.

Dynamic capabilities encompass diverse organizational processes; therefore, they require leaders who can architect and operationalize them in specific organizational settings. The abilities to anticipate, challenge, and interpret require strong cognitive skills. The abilities to decide and align involve emotional and social intelligence (Schoemaker, 2018). And the ability to learn involves all three forms of intelligence, especially when leading organizations in times of change or turmoil. The organization's ability to anticipate, challenge, and interpret clearly underpins how to sense change, and deciding, aligning, and learning are closely linked to how to seize opportunities (Schoemaker, 2018).

Teece (2016) referred to organizational agility relating it to managing deep uncertainty, which is very different from managing risk, and linking it to dynamic capabilities. Strong dynamic capabilities are necessary for fostering the organizational agility necessary to address deep uncertainty, such as that generated by innovation and the associated dynamic competition (Teece, 2016). This organizational agility is a result of DC and its micro foundations, with in turn requires further understanding of the three component factors proposed by Wang and Ahmed (2007).

2.4. Adaptive Capability

Firms that demonstrate high levels of adaptive capability prove their dynamic capabilities (Teece *et al.*, 1997).

Adaptive capability is defined as a firm's ability to identify and capitalize on emerging market opportunities (Chakravarthy, 1982). Chakravarthy (1982) distinguishes adaptive capability from adaptation. While adaptation refers to “an optimal end state of survival for a firm”, the adaptive capability focuses more on the effective search and balancing exploration and exploitation strategies (Staber & Sydow, 2002).

According to Sanchez (1995), adaptive capability is manifested through strategic flexibility. Strategic flexibility is both the inherent flexibility of the resources available to the organization and the flexibility in applying these resources. It is the result of an organization's response to the increasing dynamics of the environment (Fredericks, 2005), focusing on the organization's resources in a way that it is able to react quickly to changes and emerging opportunities.

It has been understood as abilities related to problem-solving and speedy responses to customers (Hakansson, 1982) and is characterized by three areas of organizational activities, including the firm's responses to market-customer opportunities, marketing activities to respond these opportunities, and speedy response in pursuing these opportunities (Oktemgil & Greenley, 1996).

Employees of organizations with strong adaptive capabilities are even encouraged to make process changes that they believe will benefit the organization. That is, employees are given the autonomy by the organization to suggest changes to operating procedures and practices they think are no longer viable or useful to the firm (Koller, 2016).

Adaptive capability represents an internal capacity of a firm at the core of responsiveness (Ansoff *et al.*, 1976). Responsiveness and quick reaction are major features of adaptive capability. As a type of dynamic capability, an adaptive capability is concerned with the organization's quick responses to market potentials, identifying business opportunities, and competences for effective problem-solving. This is best achieved by a mechanism that enables

and motivates people to make efforts to identify and solve problems collectively and effectively.

Gibson and Brikshaw (2004) stated that adaptability could be measured through evaluating whether the firm's management systems encourage people to challenge outmoded traditions and practices, allowing the organization to answer quickly to changes in the market and environment and evolve rapidly in response to changes in its business priorities.

2.5. Absorptive Capability

The more an organization shows its absorptive capability, the more it demonstrates dynamic capabilities (Wang & Ahmed, 2007).

Absorptive capacity is the *“ability of an organization to recognize the value of new external information, assimilate it, and apply it to commercial ends”* (Cohen and Levinthal, 1990). Zahra and George (2002) categorized absorptive capacity into two broad types: potential absorptive capacity and realized absorptive capacity. Potential absorptive capacity indicates acquiring and assimilating knowledge, whereas realized absorptive capacity shows organizational ability to exploit, transform and commercialize the knowledge attained from external sources in order to create value (Zahra & George, 2002).

In a turbulent environment, the organization's most important resource is the knowledge and the ability to absorb it, because the turbulence gives the organization the opportunity to transform potential into real absorption capacity, simultaneously increasing its overall performance (Lindsay & Shoham, 2008).

Prior knowledge enhances learning because it creates the ability to learn and apply new information more efficiently about the same topic (Cohen and Levinthal, 1990). With a favorable organizational culture in place that supports internal integration and external adaptation - factors likely to enhance the absorptive capacity of an organization - firms can be expected to perform better. Zahra and George (2002) state that absorptive capability is a multidimensional construct and proposes four component factors of the absorptive capability construct: knowledge acquisition, assimilation, transformation, and exploitation.

More recently, Eriksson (2014) identified four knowledge processes as principal elements of dynamic capabilities: accumulation, integration, utilization and reconfiguration, stating that there is ambiguity in those concepts given the complex nature of knowledge.

Knowledge accumulation happens through experience and serves the objective of replicating existing knowledge or renewing it, being a prerequisite for dynamic capabilities (Eriksson, 2014). Both internal and external sources of knowledge are important for DC: internal learning is one of the fundamental sources, as is inter-organizational cooperation (Gerard, 2005; Kale & Singh, 2007, as cited in Eriksson, 2014).

Only through integration knowledge can become available for the organization. The synchronization of internal and external knowledge has been found to contribute to resource inimitability (Shang, Lin, & Wu, 2009, as cited in Eriksson, 2014), and therefore also contributes to the competitive advantage of the organization. Knowledge can be integrated through strategies like problem-solving activities, organizational interaction and collaboration routines (Eriksson, 2014).

Knowledge utilization, in turn, can be affected by political factors such as power play which highlights the importance of managers (Prieto & Easterby-Smith, 2006, as cited in Eriksson, 2014). This utilization process is connected to absorptive capacity because firms with this capacity are better prepared to make use of the knowledge at their disposal (Cohen & Levinthal, 1990, as cited in Eriksson, 2014). Explicit means of utilization are knowledge sharing, being organizational communication a fundamental factor for it to happen, and knowledge codification.

Finally, the last process is knowledge reconfiguration. This process involves new combinations of existing knowledge or leveraging it for new purposes or in new ways. Reconfiguration is crucial for dynamic capabilities because it affects the ability to sense opportunities. Dynamic capabilities operate through the repeated recombination of current practices rather than their disruption (Salvato, 2003, as cited in Eriksson, 2014). Proactivity, for example, understanding the needs of customers or striving to find unconventional ways of serving customers, and strategic foresight, can be in the origin of knowledge reconfiguration (Eriksson, 2014).

The absorptive capability across organizations is demonstrated in several aspects. According to Woiceshyn and Daellenbach (2005), organizations that exhibit absorptive capacity:

- demonstrate long-term commitment of resources in the face of uncertainty (vs limited short-term commitment and reverse at the first sign of failure);
- learn from various partners and own research and experience and develop first-hand knowledge of the new technology (vs competitive imitation and second-hand knowledge);
- thoroughly analyze the new drilling technology and share information within multidisciplinary teams (vs superficial analysis and functional structure);
- develop and use complementary technologies (vs no complementary technologies used);
- possess a high level of knowledge and skills in areas relevant to applying the new technology.

2.6. Innovative Capability

The more innovative a firm is, the more it possesses dynamic capabilities (Wang & Ahmed, 2007).

Innovative capability refers to a firm's ability to develop new products or markets, through aligning innovative strategic orientation with innovative behaviors and processes (Wang & Ahmed, 2004). As indicated in the definition, innovative capability encompasses several dimensions.

Prior research has emphasized different combinations of these dimensions. Schumpeter (1934) suggests a range of possible innovative alternatives, namely: developing new products or services, developing new methods of production, identifying new markets, discovering new sources of supply, and developing new organizational forms.

Miller and Friesen (1983) focus on four dimensions: new product or service innovation, methods of production or rendering of services, risk-taking by key executives and seeking unusual and novel solutions.

Capon *et al.* (1992) study three dimensions of organizational innovativeness: market innovativeness, a strategic tendency to pioneer and technological sophistication.

Empirical research on innovation is long standing. Avlonitis *et al.* (1994), Capon *et al.* (1992), Hurley and Hult (1998), Miller and Friesen (1983), Subramanian and Nilakanta (1996) and Wang and Ahmed (2004) have addressed the problem of effectively measuring innovative organizational capability, and multiple indicators have been developed to measure the dimensions of innovative capability, for example strategic innovative orientation, behavioral, process, product and market innovativeness (Wang & Ahmed, 2004). These multidimensions are important in measuring the overall innovative capability as a component factor of the dynamic capabilities construct.

The ability of an organization to exploit its innovative processes is represented through its capacity to facilitate continuous incremental change within the organization. This can be observed in the way management is able to transform processes, restructure capabilities, and create internal change to manage organizational learning and creativity (Jurksiene & Pundziene, 2016). These activities then enable the organization to capitalize on its innovations by having the right products and services available for customers as they are needed. The challenge for firms in being too exploitive of their innovative capability is that they may miss changing market conditions and risk becoming obsolete (Jurksiene & Pundziene, 2016).

Firms with this ability to innovate, experiment and accept risks are more likely to explore new technologies and properly manage the uncertain environment of digitalization (Wang & Ahmed, 2007).

2.7. A research model of Dynamic Capabilities

The research model developed by Wang and Ahmed (2007) was chosen to analyze AMA's case, because it was found to be more assertive and convenient given the nature of the environment change and of the activities involved in AMA's response.

Theoretically, it was recognized that adaptive capability, absorptive capability and innovative capability are the most important component factors of dynamic capabilities (Wang & Ahmed, 2007).

In summary, the three factors are correlated, but conceptually distinct. Each has a particular emphasis:

- Adaptive capability highlights an organizations' ability to adapt itself quickly through resources flexibility and alignment with capabilities and environmental changes. Therefore, the focus of adaptive capability is to align internal organizational factors with external environmental factors.
- Absorptive capability emphasizes the importance of taking in external knowledge, combining it with internal knowledge and absorbing it for internal use.
- Innovative capability successfully links a firm's inherent innovativeness to marketplace-based advantage in terms of new products or markets. Consequently, innovative capability explains the connections between the resources of the organization and the capabilities in the market.

There are some empirical studies of dynamic capabilities, primarily based on qualitative case studies, that have found that the three component factors are indeed common across several industries, although organizations may develop their dynamic capabilities from their exclusive starting points and through their unique paths (Cockburn *et al.*, 2000, Eisenhardt & Martin, 2000, Mota and de Castro, 2005, as cited in Wang & Ahmed, 2007).

The proposed research model by Wang and Ahmed (2007), incorporates market dynamism as an antecedent to DC, and capability development and firm performance as consequences of DC.

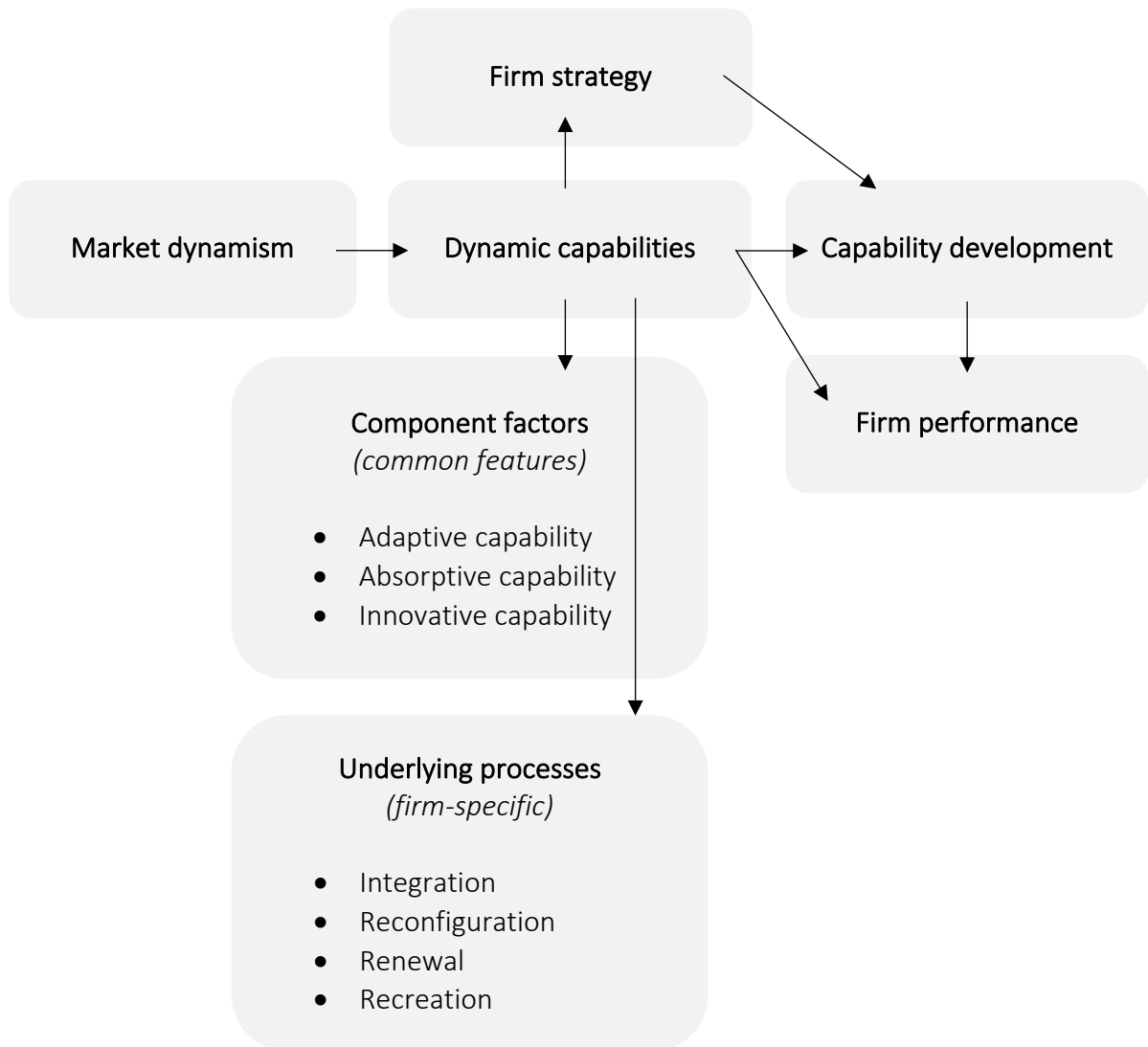


Figure 2 - A research model of dynamic capabilities (adapted from Wang and Ahmed, 2007)

2.8. Improvement Capability

More recently, another dynamic capability was defined, based on improvement capability.

Improvement capability can be defined as *“the organizational ability to intentionally and systematically use improvement approaches, methods and practices, to change processes and products/services to generate improved performance”* (Furnival et al., 2017).

According to Furnival et al. (2019) there are eight dimensions to improvement capability: organizational culture (core values, attitudes and norms and underlying ideologies and assumptions within an organization), data performance (use of data and analysis methods to

support improvement activity), employee commitment (level of commitment and motivation of employees for improvement), leadership commitment (support by formal organizational leaders for improvement and performance), process improvement and learning (systematic methods and processes used within an organization to make ongoing improvement through experimentation), service-user focus (identification and meeting of current and emergent needs and expectations from service users), stakeholder and supplier focus (extent of the relationships, integration and goal alignment between the organization and stakeholders such as public interest groups, suppliers and regulatory agencies), and strategy and governance (process in which organizational aims are implemented and managed through policies, plans and objectives).

Improvement capability has been considered a dynamic capability (Bessant & Francis, 1999, as cited in Furnival *et al.*, 2019). The dynamic capabilities view, focused on resources, states that superior and sustained performance depends on the organizational capacity to create, extend and modify its resource base through bundles of organisational routines, which must be sustained over time (Su *et al.*, 2014; Ambrosini and Bowman, 2009; Helfat *et al.*, 2007, as cited in Furnival *et al.*, 2019).

It is argued that organizations with more dynamic capabilities will outperform organizations with less, and that dynamic capabilities both mediate and underpin high performance (Felin *et al.*, 2015), particularly in dynamic environments where there is great uncertainty about changing technology, competition or political mandates, and organizations need to adapt to these changing conditions (Felin *et al.*, 2015).

2.9. Ambidexterity

Ambidexterity is very much related to DC and refers to *“an organization’s ability to be aligned and efficient in its management of today’s business demands while simultaneously being adaptive to changes in environment”* (Raisch & Birkinshaw, 2008, as cited in Yang *et al.*, 2016). Another definition that incorporates the concepts of exploration and exploitation is *“the ability of an organization to both explore and exploit - to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized and to also compete in new*

technologies and markets where flexibility, autonomy, and experimentation are needed” (O’Reilly & Tushman, 2013, as cited in Chen, 2017).

Yang *et al.* (2016), listed four main topics related to organizational ambidexterity: organizational learning (focused on exploration and exploitation), technological innovation (incremental and radical), organization design (focused on efficiency and flexibility), and organizational adaption (focused on long periods of convergence and short periods of discontinuous change, intercalated).

Exploitation focuses on using what organizations already know. An exploitative orientation relies on the assumption that the organization has all information about external opportunities and internal capabilities. Exploitative organizations expect to work within well-established problem-solution frameworks, under which problems and solutions can be clearly defined (Chen, 2017). The focus is on existing businesses or existing ways of doing businesses and on using available information and capabilities to achieve short-term organizational goals. Exploitation involves low levels of uncertainty and has high rates of success (Chen, 2017).

Exploration, in turn, focuses on discovering what is yet unknown. An exploratory orientation suggests that a firm may not have complete information about all possible opportunities, so it needs to sense and seize new opportunities (Teece, 2007, as cited in Chen, 2017). Exploration focuses on the assumption that organizations may have not yet reached their maximum capabilities, so they need to stretch their existing capabilities (Wang & Chen, 2015, as cited in Chen, 2017), transform existing capabilities (Teece, 2007, as cited in Chen, 2017), or develop new capabilities (Capron & Mitchell, 2009, as cited in Chen, 2017). It creates new possibilities, but it often produces early failures and results in temporary performance declines (Chen, 2017)

There are three types of ambidexterity: structural ambidexterity, contextual ambidexterity, and leadership-based ambidexterity (Raisch & Birkinshaw, 2008, as cited in Yang *et al.*, 2016). Ambidexterity in organizational structures is achieved by *“developing structural mechanisms to cope with the competing demands faced by the organization for alignment and adaptability”* (Gibson & Birkinshaw, 2004, as cited in Yang *et al.*, 2016). Contextual ambidexterity is defined as *“the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit”* (Gibson and Birkinshaw, 2004, as cited in Yang *et al.*, 2016).

Ambidexterity is facilitated by top-management team's internal processes, such as information, decision, and conflict management (Tushman & O'Reilly, 1997, as cited in *Yang et al.*, 2016).

Luger (2018) proposed a dynamic view of exploration and exploitation, stating that the essence of a more integrative conception of managing exploration and exploitation dynamically is that organizations have the ability to operate in and move flexibly between capability-building and capability-shifting modes. This dual capability provides them with the full arsenal of strategies required to survive in disruptive times as well as to survive episodes of discontinuous change (Luger, 2018).

Balancing exploration and exploitation dynamically may be challenging, since it forces managers to simultaneously address multiple tensions: they need to host and harmonize the conflicting exploration and exploitation requirements, they need to resist the temptation to continue on current and successful paths in favor of more challenging adaptations, and they need to maintain their long-term focus on both exploration and exploitation while temporarily aligning and realigning their activities with the environmental requirements (Luger, 2018).

Chen, 2017, described the concept of dynamic ambidexterity, which combines all three forms of ambidexterity, enabling organizations to accommodate the contradictory logics of exploration and exploitation and excel at both. For dynamic ambidexterity to work, organizations need to implement a set of strategies, structures, and processes that suit the logics of exploration and exploitation and support all three forms of ambidexterity (Chen, 2017).

Yang et al. (2016) studied ambidexterity as a dynamic capability, stating that is necessary for an organization to be ambidextrous to gain effective dynamic capability. The sensing ability involves searching opportunities from external environment, identifying whether the structure and culture fits the ambidextrous behaviors (Yang, 2016). The seizing ability refers to organization's ability to implement the external opportunity and apply it simultaneously with operating activities, helping with the effectiveness of exploitative activities. Thirdly, reconfiguring ability refers to realigning resources, especially knowledge, into pursue of new

opportunities. By combination and mutual benefiting of the two competing activities, firms can adapt to environmental change better (Yang *et al.*, 2016).

2.10. Sensing, Seizing, Transforming Capacities

Teece (2007), suggested that dynamic capabilities could be unbundled into three broad capacities of sensing, seizing and transforming.

Teece (2009) states that sensing is important as organizations need ways to steer through uncertainty and gain insight to new opportunities. Sensing can be done through the following actions: scanning action, referring to organizational efforts to explore opportunities and markets, gather information from internal and external sources and filter relevant information to detect potential opportunities; learning action that refers to organizations evaluating potential opportunities by monitoring performance or gaining more insights to identify specific areas for further actions; calibrating action where organizations engage in further sensemaking to refine their prior actions and figure out implications for future actions (Yeow, 2018).

The second capacity is seizing, in which the organization mobilizes resources to address needs and opportunities identified by sensing actions and to capture value from those actions (Teece, 2014, as cited by Yeow, 2018). Seizing is critical for alignment as it enables the organization to act on the opportunities identified (Yeow, 2018). Seizing moves the organization beyond the understanding of the new business opportunities to concluding on what specific changes to make across organizational components in order to capture those opportunities (Teece, 2007, 2014, as cited in Yeow, 2018). Therefore, seizing requires designing, selecting among options, and committing.

Finally, the third capacity is transforming, which includes renewal involving “*asset alignment, co-alignment, realignment, and redeployment*” (Teece, 2007). Teece, 2007, describes transforming (reconfiguring) as the “*ability to recombine and to reconfigure assets and organizational structures as the enterprise grows, and as markets and technologies change*”. Transforming, according to Teece (2007), includes “*enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise’s intangible and tangible assets*”, such that path dependencies and inertia are avoided (Kump, 2019). This capacity refers to taking

decisions for new business models, product or process innovations into practice by implementing the required structures and routines, providing the infrastructure, and making sure that the workforce has the required skills (Kump, 2019). Transforming is characterized by the actual realization of strategic renewal within the organization through the reconfiguration of resources, structures, and processes.

2.11. Dynamic Capabilities in Public Organizations

There has been little research using any capability resource-based theories of performance within the public sector (Burton and Rycroft-Malone, 2014; Easterby-Smith *et al.*, 2009; Smith and Umans, 2015, as cited in Furnival, 2019).

Dynamic capabilities are embedded in contexts and can only be studied as such. To reveal how dynamic capabilities operate in public sector organizations, it is therefore necessary to understand the characteristics of the public sector first (Piening, 2011), which were presented on chapter 2.1.

Piening (2011) stated that the most obvious difference between public and private is their distinctive goals. The goals of public sector organizations such as the creation of public value or accountability have been described as more multiple, conflicting, vague, intangible and hard-to-measure than those of private organizations, while the final goal of private firms, namely profit, is fairly clear and measurable (Nutt & Backoff, 1993, Perry & Rainey, 1988, as cited in Piening, 2011).

Strategic approaches in the public sector typically focus on ways to maximize organizational performance. When external resources are limited, organizations are forced to look internally for potential areas of expertise. This internal focus connects with a growing recognition that organizational performance is strongly influenced by individual actions at multiple levels of a public sector organization (Currie and Proctor, 2005, as cited in Pablo *et al.*, 2007). Therefore, strategy development in public sector organizations must take account of internal resources and a range of key strategic actors.

Public sector organizations often experience rapidly changing environments. Even some researchers claim that the public sector faces even more environmental change than the private sector, due to frequent changes in policy and the imposition of short-term time horizons tied to election cycles (Boyne, 2002). This environment of almost continual change fits well with the understanding of Dynamic Capabilities as a strategic approach (Piening, 2011).

Dynamic Capabilities are applicable to the analysis of organizational behavior in the public sector, because like for-profit firms, public sector organizations function as a collection of resources and organizational routines aimed at fulfilling policy initiatives and providing services (Bryson *et al.*, 2007; Harvey *et al.*, 2010; Pablo *et al.*, 2007, as cited in Piening, 2011).

3. Methodology

There is a tendency to use qualitative research methods in investigations of the processes of dynamic capabilities. Eriksson (2014) stated that a probable reason for this is the complexity of the processes, which makes them challenging to operationalize with quantitative measures.

Qualitative methods are used with the purpose of understanding in detail the perceptions of people regarding a particular phenomenon (Merriam, 2009). A qualitative research was described by Yin (2010) as including the phases of collecting data from a variety of resources, evaluating the data, analyzing evaluations to produce findings, and presenting the findings.

The design chosen was the case study because it is used when exploring a phenomenon in context and describing in depth a case (or cases). Yin (2009) described three conditions for the use of a case study: the purpose must be to answer “how” or “why” questions, the investigator has little control over events, and the research is focused on a current phenomenon within an actual context, especially when limits between the phenomenon and the context are not evident.

Yin (2003) stated that “the case study method is used because it is deliberately intended to cover contextual conditions, believing that they can be highly relevant to your study phenomenon”. A case study should not be limited to the case in isolation but should examine the probable interaction between the case and the context (Yin, 2013).

The case study research builds a deep and contextual understanding of the case, based on various sources of data (Yin, 2003). The data in the case study method can be collected by various techniques and may consist of research qualitative techniques, such as interviews, document analysis, and many modes of observation (Yin, 2009).

There are three types of interviews: unstructured, semi-structured and structured. Unstructured interviews do not follow any kind of script and are therefore spontaneous. The structured interviews follow a specific script and are guided exclusively by the script order. Finally, a script guides semi-structured interviews, although it does not exclude possible questions that might arise during the interviews. Taking the above into account, the best

option for this type of research is the semi-structured interview, as it allows for additional questions or information that may arise at the time of the interview to be included.

The table below (Table 1) presents the Research question, Research objective and the principal authors that were studied to answer the question and reach the objective.

Research question	Research objective	Literature Review authors
How can public organizations face environment challenges using dynamic capabilities?	To characterize dynamic capabilities in a public organization which responded to an environmental challenge.	(Yang, 2016; Eriksson, 2014; Koller, 2016; Teece, 1997, 2007, 2009, 2016, 2018; Wang and Ahmed, 2007)

Table 1 - Research question, Research objective and Literature Review authors

Research question

The purpose of this study is to answer the research question “How can public organizations face environment challenges using dynamic capabilities?” by presenting the example of AMA, a public institute that faced the Covid-19 pandemic.

Sub research questions

- Is it possible for a public organization to exhibit adaptive, absorptive and innovative capacities?
- How do dynamic capabilities impact successful reacting to environmental changes?

Research objective

To characterize dynamic capabilities in a public organization which responded to an environmental challenge.

Research techniques

The data collection was done through primary and secondary methods. As stated by Hox and Boeije (2005) secondary data collection is reusing research material that was originally collected for a different purpose than the study at hand. Therefore, because of being archived and made available, any type of primary data can serve as secondary data.

The primary data collection technique used for this study was a semi-structured interview performed to eight AMA directors and team leaders, performed via telephone call during the month of August 2020.

The secondary data collection technique used was observation and existing records, recently recorded for the purpose of monitoring the initiatives in response to the Covid-19 pandemic and presenting the reports regularly to the ministry.

The interviews consisted in a guide with three open questions that allowed for more conversation and deepening of the topic under study. The interview guidelines are shown in Annex 4 of the present document.

The three questions had the purpose of confirming a change of capabilities within the area of service, external (to the citizen and the company) or internal to AMA.

The first question intended to understand if the director/team leader recognized a change in capabilities or the development of new competences with the emergence of the pandemic.

If the answer to the first question was affirmative, the second question asked about which capabilities changed the most during this period.

Finally, the third question asked about how the initiatives and activities selected involve these capabilities.

The study participants were eight directors and team leaders from AMA. They were not randomly chosen; they were chosen because of the teams they manage, so that there could be more access to the information. The chosen directors were:

- Director of Communication
- Director of Stores and Citizen Spaces
- Director of Digital Transformation
- Director of Platforms and Digital Skills
- Head of Skills and Training Team
- Director of International Relations
- Human Resources Manager
- Director of Information Systems Management

The eight interviews lasted an average of 15 minutes each and were all conducted by telephone call.

Content Analysis

Qualitative content analysis is one of the several research methods used to analyze text data. The purpose of content analysis is to provide knowledge and understanding of the phenomenon under study (Hsieh, 2005). Qualitative content analysis is defined as a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh, 2005).

The content analysis performed in the next chapter pretends to cross the information provided as a result of the interviews conducted to eight AMA directors and team leaders and the observation performed of AMA's initiatives and activities in direct response to Covid-19 pandemic and related government guidelines.

In this context, the interviews provided an understanding of AMA's responsiveness to the Covid-19 pandemic.

The content of the performed interviews was analyzed in the light of the theoretical aspects as presented in the literature review chapter, with a focus on Wang and Ahmed (2007) proposal of three component factors of dynamic capabilities. This analysis included the crossing of the information provided in the interviews, with the possible characterization of dynamic capabilities in the theoretical part of this case study.

For the sake of clearness, the observation records and the crossing of the answers provided by the interviewees with the theoretical aspects has been exposed in tables that provide simple access to relevant information arising from the content analysis. In addition to these summary tables, a detailed review of the answers is also included in the content analysis.

The information provided in the interviews was organized and analyzed as it is present in chapter 4.4, Interview Results, and then crossed with chapter 4.3., Observation Results, and chapter 2, Literature Review, in chapter 5, Discussion and Findings.

4. AMA's Data Characterization

4.1. AMA

The information that is next presented is available on the official AMA website (<https://www.ama.gov.pt>). The Administrative Modernization Agency is the public institute that carries out the duties of the Minister of State Modernization and Public Administration in the areas of administrative modernization and simplification and electronic administration, under the supervision of the Secretary of State for Innovation and Administrative Modernization. It was created in 2007, within the scope of the Restructuring Program of the Central Administration of the State.

AMA is the public institute responsible for promoting and developing administrative modernization in Portugal. Its activities are divided into three areas: *public service delivery*, *digital transformation* and *administrative simplification*, and will be further described below.

For a better understanding of the organization, AMA's legal attributions are shown in Annex 1, and AMA's organic structure is expressed in Annex 2 of the present case study.

SWOT Analysis

"SWOT Analysis is a simple but powerful tool for sizing up an organization's resource capabilities and deficiencies, its market opportunities, and the external threats to its future" (Thompson *et al.*, 2007, as cited in Gürel *et al.*, 2017).

The following table presents the SWOT Analysis performed for AMA (see Annex 3) in a meeting where all the directors and team leaders contributed with the Strengths, Weaknesses, Opportunities and Threats they identified for the organization (Table 2).

The relevance of presenting the SWOT analysis is that, as a strategic tool, it was created shortly before the emergence of the pandemic and shows the picture that AMA's directors and team leaders had at that time, before they had to respond to the pandemic. One weakness identified

is “*Lack of agility – responding to challenges slowly*”, however the next chapters will show proof that faced with the challenge of Covid-19 there was no lack of agility.

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Projects that make a difference; • Credibility with partners (national and international); • Diversity of skills and HR quality; • Transversal action to the Public Administration Sector; • Dynamism and team spirit. 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Budgetary constraints; • Lack of human resources; • Lack of agility - responding to challenges slowly; • Insufficient planning; • Lack of project management.
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • To be a reference in digital transformation; • Leader in the service area in Public Administration; • Use of ticApp for internal consulting; • Use of legal skills; • Improve articulation between teams. 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Political changes and strong dependence on the Government; • Monitoring of emerging technologies; • Budget dependency; • Attractiveness of private entities; • Systems vulnerability.

Table 2 - AMA's SWOT Analysis, updated at the beginning of 2020. Source: Author

4.2. *Environmental Change*

The year 2020 began with a crisis that will go down in history - the pandemic of the new coronavirus (Covid-19). Imposing social isolation as the main prevention strategy, the pandemic impacts human life in all its aspects, among them the form of work, with great emphasis on the diffusion of remote work or home office. The urgent implementation of this work regime demanded quick adaptations from companies, and workers and managers were challenged to learn new skills while finding balance at home.

At AMA, the exceptional distance working period was for many employees the first contact with the remote working regime. Because of that, it was necessary to adapt quickly to this way of working, with different tools and techniques of management and communication at a distance, also requiring a new reconciliation of professional and personal life.

AMA's initiatives come in response to Government guidelines, Dispatch 3614-D/2020, that claim that in the current context, it is particularly relevant to strengthen coordination and global articulation of public administration services, using and enhancing the attributions and competences of this Governmental area in terms of innovation, knowledge and human resources management, promoting the dissemination and adoption of transversal guidelines, namely with regard to supporting the implementation of new tools and new work models, as well as strengthening collaborative work and knowledge sharing.

Government guidelines, as stated in Dispatch 3614-D/2020, also stressed that regarding the continuity of the provision of public services, it is important to take care of three important dimensions. On the one hand, the focus on the recipient of the service - citizens and companies - ensuring adequate operational measures, service standards and response levels contexts and requests, which implies a close articulation between the various levels of administration, centralization, coordination and dissemination of information related to the various services, with the definition of a centralized and coordinated model of information on the functioning of these services by the Agency for Administrative Modernization, on the ePortugal Portal.

The Dispatch 3614-D/2020 also refers that for successful adaption to a new form of work, namely remote work, there must be dissemination of information, guidelines, work management practices, using different communication channels and encouraging

collaborative work and resource sharing, to strengthen the capacity for innovation at a time when the country demands new responses from public administration.

The most important legal requirements from the Portuguese Government for AMA to act upon are:

- In order to avoid unnecessary traveling to the physical spaces used to public services, assistance for information purposes is provided exclusively by telephone and online, reinforcing these responses.
- Without prejudice to other acts that service managers may still consider urgent when there are conditions to provide the service, the services and acts to be identified by the Government or by each of the respective sectorial areas are subject to face-to-face service, with this information being made available in the ePortugal Portal.
- Special attention should be paid to telephone assistance and electronic response to contacts via e-mail, in order to inform citizens and companies about the content of this order and to inform alternatives to face-to-face service.
- The ePortugal Portal provides information on open and closed service points.
- For the purpose of monitoring, information on open and closed service points must be reported daily to AMA, including consular services outside the national territory.
- Public services must actively promote communication with citizens in order to inform available digital services and promote adherence to the Digital Mobile Key (CMD).
- All functions that can be performed outside the workplace and through the use of information and communication technologies are considered compatible with remote working.
- Remote work instruments can be made available by the public employer, when this is not possible, remote work can be carried out through the means that the worker has, with the public employer being responsible for the proper programming and adaptation to the needs inherent to the provision of remote work.
- Without prejudice to safeguarding the worker's privacy, regular contacts with the service and other workers, preferably through electronic communications and teleconferences, should be taken in order to counter the effects of physical removal from that of the respective organization.

- Reinforce, through different communication channels, the dissemination of contact lines and e-mail addresses to support citizens and companies, as well as available digital services, in order to reach different segments of the population
- Adopt innovative ways of organizing face-to-face service stations to comply with the guidelines of health authorities and disseminate guidelines and recommendations for face-to-face spaces not managed by AMA.
- Promotion of innovative management, leadership and good work management practices, integrated in an action plan for innovation within the scope of the Incentive System for Innovation in Public Management.
- Dissemination of information to the Public Administration that provides the necessary framework for the activity of services and workers in new work environments, with dedicated supports and communication channels, including a newsletter and a direct communication channel with workers and managers for clarification of doubts about the functioning of services in this context of state of emergency.

4.3. Observation Results

In order to present AMA's response in the most coherent and most similar way to the structure used for the monitoring carried out by the directors, the initiatives and activities will be exposed not by internal team, but by area of service.

The response will be divided between areas of services provided to citizens and to organizations, and areas of services provided internally. This structure was also chosen because sometimes an initiative or activity has the collaboration of several teams that work together, as was clear in chapter 4.1., in which the teams and their responsibilities were presented.

Communication

In the area of communication, the most striking initiative was the communication related to the website *EstamosON* (<https://covid19estamoson.gov.pt>), also available in the form of an app.

The website (and the app) aims to be a practical guide to support citizens and companies in combating the effects caused by the new coronavirus and Covid-19, with the main function of informing about support, good practices and the recommendations of the Health authorities, as well as accessing the best advice for working from home and using public services without having to leave home.

The website also presents the exceptional measures adopted by the Government in each Governmental area and shows the monitoring of the evolution of the country's epidemiological status. It is also available for consultation the legislation specifically approved, as well as the different Government communications in this matter, and the complete list the emergency contacts created by the various public services so that, simply and efficiently, the citizen or company can find the answer they are looking for.

Personal Service

In the personal service area, the activities and modifications depended on the constant update of superior guidelines. It is possible to confirm that the most impacting activities were, firstly, the closure of stores and citizen spaces, secondly, the adaptation of service stations, for example, with the placement of acrylic barriers, and thirdly, the opening of Citizen kiosks, *Quiosques Cidadão*. After the exceptional and temporary measures related to Covid-19, which limited face-to-face service to urgent acts and which extended the validity of Citizen Cards until October 30, the Government advanced that it was necessary to create solutions that allowed for a quick response to the high number of Citizen Card deliveries.

The Government promoted the opening of Citizens' Kiosks in the municipalities with the highest number of services related to Citizen Cards, in a partnership between the Agency for Administrative Modernization (AMA), the Institute of Registries and Notaries (IRN), the Management Institute Finance and Justice Equipment (IGFEJ) and the respective municipalities. Thus, temporary service desks, called Citizen Kiosks, were created in the municipalities with the greatest demand for these services.

IRN and IGFEJ ensured the operation of Citizen Kiosks, managed the schedules of services provided, ensuring the necessary human and technological resources and implementing a contingency plan for the prevention of Covid-19.

Digital Service

In the digital service area, the main initiative was the adaptation of the ePortugal Portal to provide the ordering and management services for the “Clean & Safe Establishment” stamp.

The “Clean & Safe” stamp distinguishes establishments in the tourism sector (local accommodation, among others) and in food and beverage (restaurants, cafes, bars, etc.), which comply with the recommendations of the Directorate-General for Health to avoid contamination of spaces with the new coronavirus. The stamp, valid until April 30, 2021, is free and optional. On the ePortugal Portal it is also possible to cancel the adhesion to the stamp, when necessary.

Secondly, the Citizen Map was also improved during the pandemic.

The Citizen Map aims to bring public services closer to the citizen and brings together the service locations in one point, that can be accessed through a website or through an app, allowing the citizen to find the nearest public services and obtain tickets online whenever they are available, for example at Citizen Stores. The application allows citizens to search by various criteria, where proximity is highlighted due to its geolocation capabilities. It allows the citizen to check in the Citizen Shops and for the services available at the service counters of the various entities, how many people are waiting, and which password is being answered. It is also possible, according to the available information, to indicate the best route in a store to carry out the desired services. It also allows the transition to the mobile device browser, allowing the user to navigate to the chosen location with a simple touch.

Because of the pandemic, it was imperative to direct citizens to digital services by reducing travel and face-to-face public service, contributing to reduce or mitigate the spread of the virus. For that reason, the citizen map was updated to show all the changes. The “Restrictions” were developed to show updated information on schedules and closed stores.

Telephonic Service

The contact center was one of the teams most impacted by the emergence of the pandemic. The workload increased dramatically in terms of calls and contacts from the citizen to answer. The average number of contacts was 2000 daily and increased to 6000 daily. Also, the government guidelines were being frequently updated, which meant that the human resources of the contact center had to be constantly updating their knowledge about services and changes.

The contact center was able to get the entire team to attend from home, telephonically and by e-mail. Fortunately, the number of resources available also increased, because the Citizen Shops and Spaces team provided many human resources that stopped attending in person, due to the closing of the stores, and started helping the contact center, performing as well telephonic service from home.

Training

In terms of training, the team's response was extensive. To facilitate the enumeration of the developed tutorials and guides, the training materials were classified in two axes:

- a) Public service tutorials for the citizen;
- b) Guides developed by AMA's Academy within the scope of Covid-19.

In the first group the most relevant tutorials developed were, besides many others:

- ePortugal Registration
- Digital Mobile Key Online Membership
- Signature with Digital Mobile Key
- EstamosON App
- Request Criminal Record Online
- Citizen Card Renewal
- Change the address of the Citizen Card
- Assistance by appointment in Social Security
- Family Support Form
- "Catering and Drinks. Stamp - Healthy & Safe Establishment"
- Tutorial updated due to the alteration of the Portal Authentication.GOV
- Scheduling a service related to the Citizen Card

Several guides were developed by AMA's Academy within the scope of Covid-19:

- Microsoft Teams – AMA's Academy micro-learning course
- Food guide - advices from DGS
- LabX Guide for Experimentation and Collaboration at a Distance
- Remote meeting planning guide
- Guide to reconciling family and professional life
- Remote work Support Tools

- "Health for All" Guide
- Guide for Heads/Team Coordinators in Remote working
- Guide to Manage and Value Family Time
- Summary of the Remote work Scheme in Portugal
- Guide to support the conduct of Online Brainstormings
- Family Management - Education at Home Guide
- Guide to Body Language in a Video Call
- Guide "Covid-19 and Disability"
- Remote work Time Management Guide
- Living in the time of Covid-19, working at home
- Guide "Motivation Techniques for Remote Teams"
- Guide "Isolation in the City and Isolation in the Countryside"
- Guide "How to manage stress in remote working"
- Guide "The new normality in public service spaces"

In addition to all these tutorials and guides, it is necessary to highlight the most important course, "Remote working in Times of Isolation". This course stands out for several reasons.

Initially, it was developed for all public workers, however, given its very positive reception, success and quality, it was extended and became available to citizens until at least September 30, 2020, on the Nau platform (<https://lms.nau.edu.pt/>). This course was a MOOC, Massive Open Online Course, and portrayed the context of isolation in an integrated, 360-degree approach.

Instead of the usual AMA Academy platform used to develop training content, the team adapted to a new tool called Nau, which had never been used.

With the closure of stores and citizen spaces, trainers who played a service role in these locations and belonged to the AMA trainers' group, were involved in the design of the guides and had the opportunity to design a course from end to end for e-learning, learning to make content, learning to work as a team in this pedagogical perspective.

International Relations

Good practice sharing meetings were held in the context of a pandemic, for example, the UN Covid-19 Behavioral Insights Working Group meeting. This area also performed the compilation of work and attendance measures in EU countries, the compilation of digital Government measures under Covid-19, and the compilation of international solutions and dissemination by AMA teams.

Portugal emerged as the country with the largest number of initiatives in response to Covid-19 on a global scale. The data from Organization for Economic Cooperation and Development, OECD, showed that of the 150 differentiating responses worldwide, 19 are Portuguese, which corresponds to about 11% of the total (information retrieved from <http://oecd-opsi.org/covid-response/>).

The monitoring of the activities developed by this area of service allowed the conclusion that in the current situation, all governments have at this moment the need to switch physical contacts to digital, and there is an urgency for countries to share what they are doing most innovative (AMAs from other countries to share knowledge).

Internal to AMA

The biggest challenge internally was the placement of all AMA's workers performing remote work, because of two reasons: Firstly, it was necessary to purchase laptops, to configure VPNs (Virtual Private Networks), to create users on Microsoft Teams – to equip every worker with the necessary tools to perform remote work effectively. Secondly, not every team was already familiar with remote work, in terms of knowing how to perform it, how to manage time, how to be physically distant from the office and from coworkers.

In the monitoring carried out by management, an adaptation of project management and risk management processes was also recorded. In March, the board of directors gave guidance on remote work, indicating that team meetings should be held daily. By the end of April, more than 13.000 meetings had been held via Microsoft Teams.

In April, the board of directors held the usual monthly meeting with all directors, and focused the meeting on three topics: 1) General status of the team, motivation and productivity in teleworking; 2) Most relevant projects and initiatives underway in the context of the Covid-19 pandemic; 3) Main difficulties or intervention needs on the part of the board itself. This meeting offered important insights about the adaptation to remote work by all teams. The main meeting conclusion was that the current situation motivated a big change in the form of work – remote, digital work - to happen much faster: without training, without communication.

4.4. Interview Results

The purpose of the interviews was to clarify how the activities and initiatives described in the past chapter, developed in response to the environmental change, involved integrating or developing capabilities.

The table below clarifies the pairing of interviewed directors and team leaders with the service area or organizational area for which they provided information and allowed further analysis (Table 3):

Interviewee	Area of Service (External or Internal)
Communication Director	Communication
Director of Stores and Citizen Spaces	Personal service
Director of Digital Transformation	Digital Service
Director of Platforms and Digital Skills	Telephonic Service
Head of Skills and Training Team	Training
Director of International Relations	International Relations
Human Resources Manager	Internal to AMA
Director of Information Systems	Internal to AMA

Table 3 - Matching of interviewees with areas of organizational response to Covid-19 pandemic

The next table, Table 4, shows the information provided by the directors and team leaders, with focus on which capabilities were more important during this phase, which were the ones that were reconfigured, integrated or developed to deal with the rapid environmental changes (Teece, Pisano and Shuen, 1997).

Area of Service	Capabilities	Main observations
Communication	<p>Prioritization</p> <p>Adaptation</p> <p>Sensitivity to the context</p>	<p>Prioritization of activities that were not planned.</p> <p>The problems of the citizen changed – new need for information regarding health, work and public services.</p>
Personal service	<p>Team Management</p> <p>Learning Management</p> <p>Adaptation</p>	<p>Citizen Stores and Spaces closed, and employees were transferred to the telephonic service – contact center, so they were managed differently (see the line of Telephonic Service).</p> <p>An environment of uncertainty and change, with new guidelines.</p> <p>Employees had to be trained in telephone assistance.</p>
Digital Service	<p>Team Management</p> <p>Cooperation</p> <p>Adaptation</p>	<p>It was necessary to integrate new forms of work.</p> <p>The environmental change was seen was an opportunity to rethink the business and question the role of the organization, teams and services.</p> <p>Prioritization of activities that were not planned.</p> <p>The team had to adapt and cooperate with the development team without a single face-to-face meeting.</p> <p>The focus was on quick deliveries to successfully give response to necessities.</p>

Telephonic Service	Team Management Cooperation Proactivity	<p>The employees that performed personal service at the citizen's stores had to learn to work with a new platform to work at the contact center.</p> <p>The selected employees received training and had to know several services well, developing skills that would allow them to react and answer questions assertively.</p>
Training	Learning Management Cooperation Innovation	<p>Very quick adaptation to Microsoft Teams.</p> <p>Originating better results, greater concentration at work, productivity improvement, being an example to public administration.</p> <p>The cooperation with trainers from citizen shops that created content from the beginning of the training to the end was an opportunity brought by the pandemic.</p>
International Relations	Team Management Learning Management Cooperation	<p>Portugal emerged as the country with the largest number of initiatives in response to Covid-19 on a global scale.</p> <p>The work did not change.</p> <p>There was a necessity to share knowledge and to take in external knowledge from other countries.</p>
Internal to AMA	Autonomy Problem Solving Cooperation	<p>The human resources manager stressed how successfully (and very quickly) the employees adapted to remote work.</p> <p>Specifically, in the Information Systems Management Direction there were no changes in</p>

		<p>competences, but there was higher productivity and higher workload. There was no new type of work.</p> <p>Everyone acquired video conferencing skills.</p> <p>The integrated global competence was working with new Office 365 tools.</p>
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Table 4 – Interview results (adapted after analysis of interviews)

Communication

The communication director mentioned that the biggest adaptation with the emergence of the pandemic period was the move to remote work. Remote work competences had to be developed, especially time management because of the assumption of total availability. The director stated that there was a need to meet remotely once a day and there was an increase in workload. The nature of the work and the skills required to meet the objectives did not change by themselves, but a new competence had to be integrated: sensitivity to the context. Communications on social networks, for example, had to take into account the new problems of the citizen, their priorities, and the need for information on health, work and availability of public services. New topics to be communicated and new activities represented a redefinition of priorities for the team.

Personal Service

The director of Citizen Shops and Spaces commented on the biggest challenges due to the emergence of the Covid-19 pandemic for the area of Personal Service. Citizen Shops and Citizen Spaces had to close and then its reopening was programmed and prepared. Therefore, it was necessary to think about a new service model that would involve distance between the citizen and the employee working at the personal service level. This service model required the installation of acrylic barriers, which was possible, with only the difficulty of contacting external suppliers because the market was at a standstill. There was an adaptation of the people from

the direction team of Citizen shops and Spaces to remote work, which went very well for two reasons: firstly, because people wanted the change. Second, because the working day before the Covid-19 pandemic already did not end when leaving the organization. Often there was work to be done at a distance. Remotely daily meetings started to be held successfully with the adaptation to remote work.

Regarding the closure of Shops and Citizen Spaces, employees who worked there were channeled to perform telephonic service, being managed differently, and having to learn how to serve the citizen and answering the citizen in a different way with new information. The environment was of uncertainty and constant change, as information and guidelines were being updated with great frequency. The most integrated and developed capabilities in the face of this challenge from the external environment were learning management, adaptation and team management.

Digital Service

The director of digital transformation stated that the three most important capabilities that were integrated and developed were team management, cooperation and adaptation. It was necessary for the team to integrate new forms of work. In his view, the environmental change was seen as an opportunity to rethink the business and question the role of the organization, teams and services. The Covid-19 challenge, however bad for the world, was seen as bringing opportunities that had to be identified for developing services and responding innovatively. The focus was on responding with quick deliveries as well, to fulfill necessities. The director also referred the necessity of prioritizing some activities that were not planned.

The adaptation to remote work went really well. It was a challenge for the team to cooperate with the development team without a single face-to-face meeting, but the cooperation was successful. As for team management, the director stated that the team was *“at the limit of exploring all the features of Microsoft Teams”*, and the only problem was sometimes the file duplication issue. The team leaders – second line directors – have two meetings per week with their teams and state that there is even competition between the areas as to which is making the best use of Teams.

The delivery of the citizen map was an opportunity explored innovatively, meeting the needs of the citizen in understanding which services were available.

Telephonic Service

The director of Platforms and Digital Skills is the first line director of the contact center, which was the most impacted team with the emergence of the pandemic. The employees who performed personal service at the citizen's stores had to learn to work with a new platform to work at the contact center, answering the citizen via telephone or by e-mail. The selected employees received training and had to know several services very well, learning new knowledge about public services and new skills to deal with the public telephonically, as well as writing skills that would allow them to react and answer questions assertively, and doing all of this at home.

The three most important competences as referred during the interview were team management, cooperation and proactivity. The huge increase in workload, and the reinforcement in the workforce, required all these three competences to be integrated.

Training

The team leader of the Training team reported that since the emergence of the pandemic there was a clear improvement in the team's results. There was a productivity improvement and a greater recognition as an example to public administration in Training matters. The dedication and concentration at work increased. The adaptation to Microsoft teams was also very fast.

The three most integrated and developed competencies were learning management, cooperation and innovation. The team had to investigate about remote work to produce a very important training course about it for all public administration. The course was so successful that for the first time a training course was extended to all citizens, so that anyone with a computer and internet access could take the course about remote working. This process of

making the course massively available required learning how to work with an entirely new platform. Cooperation was as well crucial because, besides the enormous quantity of training courses developed – for AMA internally, for public administration and for the citizen – which required more dedication and more teamwork, also there was a cooperation with employees from the Citizen Shops and Spaces that already gave training, and learned how to develop training courses from beginning to end.

International Relations

The international relations director referred that the most important skills were team management, learning management and cooperation. Cooperation because there was a great need to share knowledge between countries and learning management because of the need to take in external knowledge from other countries. Nonetheless, Portugal emerged as the country with the largest number of initiatives in response to Covid-19 and many of them were AMA's responsibility.

The director stated that the work itself did not change – the team actually already did days of remote work every week -, and that AMA's culture and its facility in using remote work tools is not common in public administration. The remote working culture, we continue to have (before the team had 2 to 3 days a week), but team management had to be a developed competence because of the assumption of total availability.

Internal to AMA

The human resources manager stressed how successfully (and very quickly) the employees adapted to remote work. People wanted the change, and the necessity caused an abrupt transition to remote work, at home, that happened without preparation, without communication, without previous training or indications. The environment was one of uncertainty. The competences referred during the interview were autonomy, problem solving and cooperation. It was felt a great sense of dressing "AMA's shirt" during the emergence of the Covid-19 pandemic.

The Information Systems Management director was also interviewed regarding AMA's internal area. The director referred that no new work was developed, but there was higher productivity and higher workload, simply there was no new type of work. However, the director stated that everyone acquired video conferencing skills and that the integrated global competence was working with new Office 365 tools.

5. Discussion and Findings

The purpose of this chapter is to discuss the dynamic capabilities inside the case study, crossing the information obtained through the analysis of AMA's initiatives and interviews that confirmed the integration or development of capabilities with chapter 2, Literature Review.

The table below, Table 5, represents the crossed information, focusing on the three components proposed by Wang and Ahmed (2007) and will help to organize the discussion in this chapter. developed activities and initiatives, underwent changes and/or responded to challenges. These responses were crossed with the literature and the content analysis allowed to classify each response as showing "Adaptive Capability", "Absorptive Capability" and "Innovative Capability".

Area of Service	Adaptive Capability	Absorptive Capability	Innovative Capability
Communication	x		
Personal service	x	x	
Digital Service	x	x	x
Telephonic Service	x	x	
Training	x	x	x
International Relations		x	

Internal to AMA		x	
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Table 5 - Summary of Dynamic Capabilities in its Component Factors by Area of Service

AMA’s Adaptive Capability

Most service areas demonstrated dynamic capabilities in the adaptive component. The ability to adapt is revealed through the flexibility of the resources available to the organization, and in aligning resources and capabilities with environmental changes, as mentioned by Sanchez (1995). That was seen in all service areas except for international relations and internal to AMA.

In the area of communication, the ability to prioritize communication related to Covid-19 and changes in public services, in response to changes in the problems and needs of citizens and companies, and the speed with which this team repositioning took place, is a clear manifestation of adaptive capability, in the light of the definition of Hakansson (1982). This team’s sensitivity to context originated responsiveness and the responsibility to express a quality service in a timely manner, prioritizing activities that were unplanned.

AMA was able to channel the employees who provided services to the public in the citizen's stores and adapt these resources to the service of the contact center, which demonstrates once again the flexibility in the application of its resources and its adaptive capability.

In terms of digital service, the ePortugal Portal was constantly updated showing high responsiveness to changes in the external environment. The digital transformation team recognized the opportunity to improve a product, namely the citizen's map, and had to adapt and cooperate with the development team in a new manner – through virtual meetings.

The increase in the volume of contacts at the contact center demanded that more employees be allocated to this team, with employees from the service of the citizen's stores being allocated. A good business model can free up resources that can be route toward developing future business and can help to achieve overall strategic priorities (Teece, 2018). One of the competences mentioned in the interview was proactivity, which reveals adaptive capability

because it shows employees' motivation to solve problems collectively and effectively. Employees of organizations with strong adaptive capabilities are even encouraged to make process changes that they believe will benefit the organization, according to Koller (2016). Employees are given the autonomy by the organization to suggest changes to operating procedures and practices they think are no longer viable or useful to the organization (Koller, 2016).

The training team presents an excellent case of displaying dynamic capabilities in the adaptive component. When stores and citizen spaces closed, employees became available, and some employees from the customer service training area were selected to join AMA's internal training team, which saw its workload increase considerably to respond to the needs of the citizen. This adjustment and resource allocation is a management ability that proves dynamic capabilities. Covid-19's contextual change represented an opportunity for these trainers to create training content and manage training from start to finish.

The adaptive capability in the international relations team and internally at AMA is not evident as it consisted merely in adapting to remote work, but some team members already worked remotely, so it will not be discussed.

This whole response was carried out in remote work, that is, it was carried out while most teams were managed differently, as it was not usual for every team to perform its activities while in remote work. The remote working tool adopted, namely the software Microsoft Teams, was also explored simultaneously with all other changes and activities developed, as not every employee already knew how to use every feature available in the software.

AMA's present capabilities have enabled teams to respond quickly to changes and prioritize new activities, aligning internal organizational factors with external environmental factors.

AMA's Absorptive Capability

Absorptive capability emphasizes the importance of taking in external knowledge, combining it with internal knowledge and absorbing it for internal use. According to Zahra and George

(2002), an absorptive capability is a multidimensional construct composed by: knowledge acquisition, assimilation, transformation and exploitation.

In the Personal service and Telephonic Service, employees who served the citizen and the company had to be constantly attentive to changes in the external environment in order to clarify doubts. The same happened to the ePortugal Portal, in terms of Digital Service. Proactivity and understanding the needs of customers can be in the origin of knowledge reconfiguration (Eriksson, 2014).

In the area of Training, the team had to learn to use a new way of creating and managing training, as a course was created on a new platform (Nau), which demonstrates learning with the aim of creating value.

Dynamic capabilities operate through the repeated recombination of current practices rather than their disruption (Salvato, 2003, as cited in Eriksson, 2014). The International Relations team exhibited absorptive capability as it assimilated and absorbed knowledge in cooperation and sharing meetings with other entities at an international level. As Eriksson (2014) stated, knowledge can be integrated through strategies like problem-solving activities, organizational interaction and collaboration routines.

At AMA, internally, the knowledge acquisition was necessary to deal with the new way of working remotely. Remote working was already familiar to some employees because it was already done by some teams, however for many employees it was essential to quickly learn to work with Microsoft Teams, to have virtual meetings, to plan and organize the day in remote work, to consider the balance between work and family life, among other learnings that remote work implies.

AMA's Innovative Capability

Innovative capability successfully connects an inherent organization innovativeness to marketplace-based advantage in terms of new products or markets. Innovative capability explains the connections between the resources of the organization and the capabilities in the market.

Strategic innovative orientation, behavioral, process, product and market innovativeness are multidimensions that are important in measuring the overall innovative capability as a component factor of the dynamic capabilities construct (Wang and Ahmed, 2004). In this sense, it is considered that the ability to innovate at AMA is the ability to produce something new in response to the changing needs of the citizen ("marketplace-based advantage" applied to the public sector).

The innovative capability was observed in two distinct areas, Digital Service and Training.

In the Digital Service area, the innovation of the "Clean and Safe Establishment" stamp stands out, which responds creatively to the needs of companies. Yang (2016) stated that searching opportunities from the external environment, identifying whether the structure and culture fits the opportunity, implement the external opportunity and apply it simultaneously with operating activities, is a dynamic capability related with balancing exploitation and exploration. The citizen map was an already operating app that was highlighted given the necessity to constantly inform the citizen of the public services that were available.

AMA's training team develops a training course that represents innovation. The MOOC "Remote working in Times of Isolation" was the first course that AMA developed for all civil servants, which, given its quality and very positive reception, was made available to all citizens. It represents innovation precisely because it is a "Massive Open Online Course" and because it was developed on a new platform, given the necessity of the citizen. As said by Teece (2018) a good business model design requires a strong knowledge of customer needs and requires the technological and organizational resources that might meet those needs.

AMA's Dynamic Capabilities

AMA, through the development of its dynamic capabilities, mainly of the three components adaptive, absorptive and innovative, responded to an environment of great uncertainty and was able to maintain or increase, depending on the area of service, its performance, reaching the proposed objectives and generating public value. These achievements were possible because AMA searched for opportunities of improvement, because AMA used, moved and reallocated resources, while inspecting the needs of the citizen and reacting in a problem-solving approach, taking in external knowledge, cooperating between internal teams and with external entities, national and internationally, which are dynamic capabilities.

This discussion allowed the establishment of a relationship between the Research question, the Research objective and the Findings that are generalized from the single case approached in this work (Table 6):

Research question	Research objective	Findings
How can public organizations face environment challenges using dynamic capabilities?	To characterize dynamic capabilities in a public organization which responded to an environmental challenge.	Public organizations can overcome environments of great uncertainty and maintain or increase their performance, reaching the proposed objectives and generating public value, if they search for opportunities for improvement, if they use, move or reallocate resources, if they inspect the needs of the citizen and react in a problem solving manner, and if they take in external knowledge and cooperate.

Table 6 – Relationship between Research question, Research objective and Findings

6. Conclusion

6.1. *Main conclusions*

This case study is concluded by first stating that its general objective was achieved, as it was possible to analyze and characterize dynamic capabilities in a public organization which responded to an environmental challenge, the Covid-19 pandemic and the related new government guidelines.

The research question initially proposed, "How can public organizations face environment challenges using dynamic capabilities?", was answered with the contribution of a single case study of a public organization, the Portuguese Administrative Modernization Agency.

It has been demonstrated through this case study that AMA's capabilities, namely its adaptive, absorptive and innovative capacities, enable it to successfully respond to the demands and changes in the external environment. This work tells a success case of producing great public value while facing simultaneously the adaptation to remote work in all its advantages, disadvantages and challenges.

Through the development of their dynamic capabilities, mainly of the three components adaptive, absorptive and innovative, public organizations can overcome environments of great uncertainty and maintain or increase their performance, reaching the proposed objectives and generating public value, if they search for opportunities for improvement, if they use, move or reallocate resources, if they inspect the needs of the citizen and react in a problem solving manner, and if they take in external knowledge and cooperate.

This study has theoretical implications because it shows that it is possible for public organizations to develop dynamic capabilities, which is a topic under investigated. As showed in the present work, literature about dynamic capabilities in the public sector is scarce – dynamic capabilities are much depicted as a source of sustainable competitive advantage, and competitive advantage is not the main concern of public organizations, as improved performance and public value creation are. AMA's strategic approach focus on creating public value and it pursuits improved performance, which is a result of possessing dynamic

capabilities that allow opportunities for improvement to be identified and explored even under moments of crisis and great uncertainty.

The managerial implications of this study are that strategically AMA has more agility than thought previously to Covid-19 pandemic, as stated in its SWOT analysis, and should maintain its adaptive, absorptive and innovative capabilities. This conclusion includes a suggestion for AMA to redefine its SWOT analysis, because “lack of agility – responding to challenges slowly” is not one of its weaknesses, as this work demonstrated.

6.2. Limitations

The present case study has some limitations that are necessary to consider.

The shortage of information on dynamic capabilities is the first limitation found. This work was written, in fact, crossing themes on which there is little research and even little information: dynamic capabilities, public administration and Covid-19. Scientific literature relating dynamic capabilities and public administration is very scarce which has become a limitation for this research.

The second limitation is that the sample size could have been more robust, as only some directors and some team leaders were interviewed. A sample of 8 people who have a strategic vision on the organization was enough to complete this study with conclusions, but the study would be more substantial if all directors, all team leaders and some team members could participate and contribute with other perspectives on AMA's response. Related to this limitation it is necessary to notice that not all areas of AMA were included, namely the area of LabX and and ticApp did not enter this case study because the initiatives developed during the pandemic period were not considered the most relevant and impactful. However, it is a limitation of this study not to have covered all areas of the organization.

The third limitation in this investigation is that there could be a certain difficulty for the organization's employees that were interviewed to distance themselves from their team in an operational point of view, so they could get a more strategic perspective on AMA's response.

As the researcher already knew the interviewees, and also was familiar with the organization as for currently working there, sometimes it was difficult to get the necessary abstraction during the interviews, which represents the fourth limitation.

Finally, it is important to refer the main limitation of study of this nature, a case study, that is the difficulty or impossibility to generalize an answer to a research question from a single study.

6.3. *Future research*

Although this work contributes to the knowledge regarding the existence of dynamic capacities in the public sector, further research on the topic is suggested.

First of all, it would be pertinent to study the dynamic capabilities of AMA focusing not only on a response so limited in time.

Also, the existence of dynamic capabilities in more public entities could be studied.

In the future, a useful suggestion would be to investigate how to develop dynamic capabilities in public administration.

Furthermore, a public organization's change that happened proactively without the existence of a previous constraint from the environment could be investigated, as this work focused on a reactive response. It would be important to investigate how can public organizations use their dynamic capabilities to adapt proactively.

Equally important is investigating how the Covid-19 pandemic represented a learning opportunity, in addition to leveraging dynamic capabilities.

Finally, future research could be done in different countries, regarding responses to Covid-19 of other Administrative Modernization Agencies.

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8. Annexes

Annex 1 – AMA's Attributions

Attributions

AMA has the following attributions, according to Decree Law 43/2012:

- Contribute to the definition of strategic lines and general policies related to electronic administration, administrative simplification and the distribution of public services, including interoperability in Public Administration;
- Manage and develop networks of shops for citizens and businesses, using multi-service, integrated and specialized counters, articulating with voice and network service systems;
- Promote the modernization of the provision and distribution of public services aimed at meeting the needs of citizens and companies;
- Promote central, regional and local policies in the area of the information society, through the management of Internet and other similar spaces administered by it, in consultation with other entities with responsibilities in the information society, whenever justified;
- Support the development and implementation of e-learning platforms and solutions;
- Ensure external representation and establish cooperative relations within the scope of its duties with other foreign entities, namely in the framework of the European Union and Portuguese-speaking countries;
- Give a prior opinion and follow up on public investment projects (PIDDAC) and give a prior opinion on the allocation of European funds, in the context of administrative modernization and simplification and electronic administration;
- Promote and coordinate the inter-ministerial network of agents for modernization and administrative simplification;

- Promote studies, statistical and prospective analysis and stimulate research, technological development and dissemination of good practices in the areas of administrative and regulatory simplification and electronic administration;
- Propose the creation and management of project teams, of a transitional, inter-ministerial or interdepartmental nature, for the implementation, development and evaluation of modernization and administrative and regulatory simplification actions, namely through the assessment of administrative burden of the legislation with a view to its corrective simplification.

Annex 2 - AMA's Organic Structure

Organic Structure

To understand AMA's response to the pandemic, the official competences of each of its teams must be acknowledged.

Platforms and Digital Skills Management

- Operationally manage the provision of digital public services in an omnichannel logic, ensuring the consistency of content, services and user experience through the different digital channels - Web, phone, mobile, APP, social networks - in conjunction with the management responsible for management and development face-to-face service;
- Promote the rationalization of financial and human resources allocated to the provision of digital services;
- Promote excellence in public service, through an efficient and effective provision of digital services;
- Promote a service delivery centered on the citizen and the company, conducting a true policy of "Citizen Relationship Management" and operating single points of contact through the orchestration of services and content of the various institutions of the Portuguese Public Administration and the European Union;
- Monitor and evaluate public service provision and service levels in digital channels, in conjunction with the area responsible for planning and quality, as well as promoting, whenever necessary, improvement actions in the services provided;
- Ensure AMA's institutional relationship with entities and their partners, in order to ensure the continuous maintenance of services and content on the various digital platforms;
- Ensuring, in conjunction with the team responsible for business service platforms, the provision of digital services, including support to users, within the scope of public services aimed at companies;

- Support the initiatives of the area responsible for the digital transformation in the development of new digital service platforms, ensuring the contributions and the satisfaction of the development needs of new digital platforms and services or new functionalities, in order to maximize the quality and scope of the services.

Information Systems Management

- Manage and support the information and communication systems that make up the entire AMA technology park, guaranteeing availability, operability, security and efficient support levels for the services provided to the various departments, teams and entities;
- Provision of support to higher decision making and public entities in the scope of projects;
- Support the expansion of the service network;
- Develop critical systems continuity plan;
- Ensure the development and maintenance of AMA's governance and management model for information technologies;
- Ensuring the most efficient management of the AMA technology park and its evolution to a structure with high reliability, efficiency and adaptability;
- Provide resources, skills and methodologies to support the other AMA teams in the development of projects supported by information technologies, ensuring the service levels contracted with the respective client areas;
- Manage contracts and suppliers within the scope of the tasks provided for in the governance model of information systems and technologies within their competence;
- Prepare and submit periodic reports to the Board of Directors regarding risks, incidents or other problems in the areas under its responsibility, with proposals for preventive and corrective actions;
- Promote the rationalization of the costs of communications and infrastructure accommodation, as well as their evolution at the physical and logical level;
- Ensuring the quality of service of infrastructures and systems, as well as the security of networks according to the established levels;

- Ensure the average time to resolve incidents and service requests;
- Ensure acceptance of incident resolution and service requests;
- Collaborate with the area responsible for training in promoting internal training actions that aim to provide users with better computer knowledge and practices in terms of computer security.

Digital Transformation Direction

- Define strategies, standards, architectures and references for the transformation and modernization of Public Administration, supporting the Government in promoting, monitoring and accompanying, proposing governance models and coordinating Government areas, working groups and the implementation of transversal solutions, which constitute the pillars for the development of modernization solutions that transform the working methods of the public sector and the relationship with citizens and companies;
- Monitor AMA measurements in the Simplex program;
- Evaluate administrative charges for Simplex measures;
- Coordinate AMA's activities in the direction of Digital Transformation and Electronic Government;
- Ensure the dissemination and use of the platforms and features that AMA develops and maintains, including the Electronic Identification, Interoperability, Transversal Services to Public Administrations features, namely the Interoperability Platform, SMS Gateway or the Payment Platform, as well as the platforms for widespread use by citizens and entrepreneurs/companies such as the Citizen Portal;
- Ensure the integrated plan for the development of new digital, transversal and global service platforms for the entire AMA;
- Develop and implement an integrated policy for the use of Digital Services by the Society;
- Monitor, in articulation and constant collaboration, the operational management areas of service and content platforms for citizens and companies;

- Coordinate the implementation and launch of new digital platforms for Public Administration, Citizens and Companies;
- Promote a mass adherence to the Digital Mobile Key (CMD);
- Follow Simplex + Program.

TicAPP

- Evaluate, Review and Design Enterprise Architectures;
- Identify and Specify Technical Requirements for Computer Solutions;
- Elaborate Technical Clauses for Specifications;
- Promote the use and facilitate integration with public administration solutions and technological platforms;
- Build common platforms and accelerators for the construction of Digital Public Services;
- Support public entities in defining the Digital Transformation strategy and roadmap;
- Train public entities in the management of ICT projects;
- Support public entities in the Design of Digital Services, centered on the end user;
- Support public entities in the Modeling and Optimization of Business Processes, using ICT;
- Perform the survey, analysis and specification of information systems requirements;
- Maintain the framework of good practices for usability of digital services and help in their application to all user interfaces;
- Assist the different entities in carrying out audits, tests and certification of IT solutions;
- Develop prototypes or proofs of concept to validate ICT solutions;
- Develop software projects in the web or mobile context;
- Support public entities in the definition of Data Analytics and Data Science strategy and roadmap;
- Conduct the survey, analysis and specification of requirements for decision support information systems;
- Develop advanced data analysis projects for public entities;

- Develop quantitative, predictive and / or prescriptive models that allow the use of available data to support political and administrative decision-making processes.

Information Security Management Team

- Support the Board of Directors in defining the information security policy;
- Define norms and procedures regarding the ISMS and promote its review whenever appropriate;
- Propose and coordinate risk assessment activities, implementation/update of security controls and response to security incidents, in conjunction with other teams, namely with the Information Systems Department;
- Define prevention, detection, response and contingency plans in the face of information security risks and incidents, in conjunction with other teams;
- Propose, conduct or monitor information security audits;
- Ensure coordination with the Data Protection Officer on aspects related to data privacy;
- Guarantee the reporting of control information;
- Promote a culture of information security in line with the organization's policy and objectives through awareness, training and information initiatives aimed at all AMA employees.

LabX

- Design public services focused on the needs of citizens and businesses through research, co-creation and experimentation with innovative solutions. LabX acts as a safe experimentation space to explore and respond to the new challenges faced by Public Administration entities and to develop the experimental projects and training actions necessary to improve public services;
- Contributes to the promotion of the innovation ecosystem in partnership with the national scientific system, civil society organizations or companies, also working to make Public Administration more open and more participatory for citizens;

- Carry out awareness and training initiatives aimed at teams and public administration entities;
- Develop and implement innovative intervention projects focused on citizens;
- Apply empirical research that allows informing and substantiating the processes of development, management and improvement of public services;
- Create safe co-creation and experimentation contexts;
- Streamline collaboration networks integrating Public Administration entities, higher education institutions and research centers, experimentation laboratories and other partners of the national and international innovation ecosystem, and other entities with recognized merit in these fields, namely civil society associations, including start-ups;
- Experiment with innovative solutions and approaches to improve the provision of public services to citizens and companies, with a special emphasis on attendance, on-site and digital services, aiming at adapting public services to the real needs of citizens and companies and increasing efficiency and the efficiency of the functioning of the Public Administration;
- Encourage the participation of various actors in the innovation process, integrating Public Administration, Companies and Start-ups, Higher Education Institutions and Civil Society with a view to the principles of Open Administration and Sustainable Development;
- Investigate and monitor the emergence and evolution of trends, needs and expectations in contemporary societies, in particular, in the field of innovation, the emergence of emerging technologies and their impact and the development of innovation techniques, instruments and processes in order to inform and support the other AMA and Public Administration teams.

Business Service Platforms

- Manage and functional develop public service platforms aimed at companies and entrepreneurs, namely, the Online Company Space, Entrepreneur Desk, Responsible

Industry System and the Multichannel Platform, in conjunction with the responsible area by information systems;

- Analyze - in conjunction with the legal area - and incorporate in the various legal regimes that must be dematerialized and processed on this platform;
- Support the area responsible for digital transformation and ticApp in the development of new solutions and support platforms for business entities;
- Ensure the calculation of balances and financial flows between AMA and Public Administration partners regarding the various regimes and the rates provided for in them;
- Identify new modernization and simplification solutions for companies;
- Ensure AMA's institutional relationship with Central and Local Administration institutions within the scope of initiatives to develop and promote digital services for companies and entrepreneurs.

International Relations Team

- Ensure the fulfillment of AMA's responsibilities with international organizations such as the European Union, OECD, UN, Digital Nations, ICA, CPLP, among other global and regional entities (participation and internal coordination of the works as well as reception, analysis and dissemination and / or gathering information from the teams);
- Ensure AMA's global relationship with its foreign counterparts, promoting the exchange of knowledge;
- Identify and promote opportunities for bilateral and multilateral agreements and international partnerships within the scope of AMA's competences, as well as accompany and solidify existing agreements;
- Organize the reception and accompany international delegations with a view to projecting the AMA image externally and collecting best practices;
- Coordination of AMA/national participation in the negotiation of community diplomas with the MNE;
- National coordination of the European eGovernment Benchmark exercise;
- Prepare and keep up to date the map of international trips made by AMA employees;

- Identify the international travel needs of AMA employees, as well as representation at international events and the level of representation required;
- Identify opportunities to apply for prizes and possible recognitions in international events, platforms and contests, ensuring the dissemination of the state of the art of the Portuguese digital Government.

Department of General Administration

- Ensure the management of AMA's financial resources;
- Manage assets and keep their records organized;
- Ensure document management and reception and dispatch of correspondence;
- Ensure general administrative support;
- Prepare the operating and investment budget projects, taking into account the approved activity plans and programs;
- Monitor the execution of the budget according to strict management of the available resources, adopting the necessary measures to correct any deviations or proposing those that exceed its competence;
- Prepare and approve the management account;
- Ensure the necessary conditions for the exercise of financial and budgetary control by legally competent entities;
- Process and settle authorized expenses;
- Prepare annual and multi-annual activity plans, identifying the objectives to be achieved by the services, which must include measures to reduce bureaucracy, quality and innovation;
- Monitor and evaluate the execution of the activity plans and the achievement of the proposed objectives and elaborate on the annual activity report, as well as the social report;
- Implement a management system by objectives, defining methodologies for project management;
- Carry out quality management, promoting continuous improvement of services and compliance with the standards of the quality management system;

- Promote internal quality audits;
- Develop action plans aimed at improving and improving the quality of customer service, namely through quality letters, defining management methodologies by objectives;
- Proceed with the internal dissemination of AMA, I. P.'s missions and objectives, the competences of the organic units and the forms of articulation between them, developing forms of coordination and communication between the organic units and their employees;
- Prepare and execute the annual internal communication plans.

Communication Direction

Ensure the general coordination of the dependent teams (Events and Public Relations Team, Image Team and Content and Space Innovation Team), aiming for:

- The promotion, dissemination, communication and image management of AMA's products and services, through the production of content, graphics and multimedia;
- The definition of AMA's visual and corporate identity, headquarters and decentralized services;
- The promotion of internal initiatives that enhance sharing and knowledge *;
- The elaboration and management of contents as well as the management of dissemination channels;
- The management of partnerships and contacts with the press;
- The design, implementation and management of physical spaces for sharing, exhibition and dissemination;
- The management, monitoring and operationalization of the Participatory Budget Portugal;
- The edition of publications and external content, namely the publication of the Diagram Magazine and the edition of the Minuto Cidadão program.

Department of Citizen Stores and Spaces

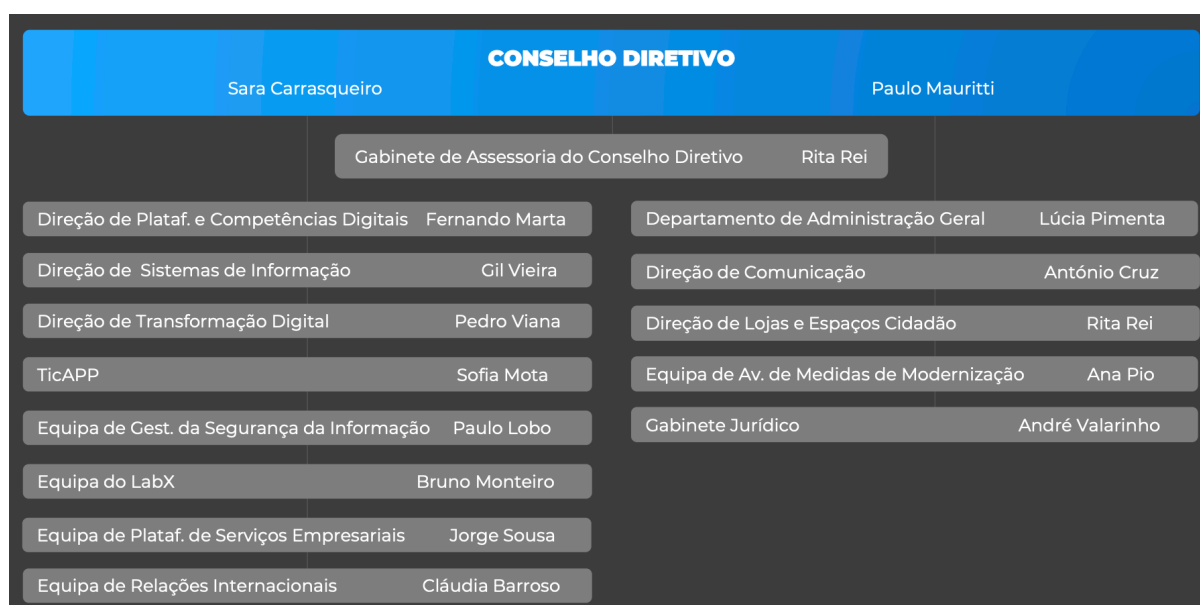
- Manage and develop the physical network of decentralized services for citizens and businesses;
- Develop and implement instruments that allow to know and monitor the face-to-face service network;
- Promote the rationalization of financial and human resources allocated to the provision of public attendance services and excellence in public attendance, through an efficient and effective provision of public services;
- Identify opportunities and threats in the distribution of face-to-face public services, with a view to achieving the former and mitigating the latter;
- Pronounce, whenever requested, on the costly acquisition of spaces for public service by public administration services and bodies;
- Promote, in conjunction with the quality area, studies and rankings to measure the quality of care;
- Articulate, as the Managing Entity of the Citizen Stores and Spaces Network with the Public Administration entities and the Municipalities, the installation of new service locations within the scope of AMA's competences.

Modernization Measures Assessment Team

- Evaluate and support the investments of public administration bodies, ensuring strategic and technological alignment, disseminating good practices and operationalizing the support system for administrative modernization through the granting of community financing and ensuring the respective monitoring of project execution;
- Ensure the operationalization of SAMA Project Management – 2020;
- Ensure the best pursuit of AMA's tasks in the assessment of ICT expenditure.

Legal Office

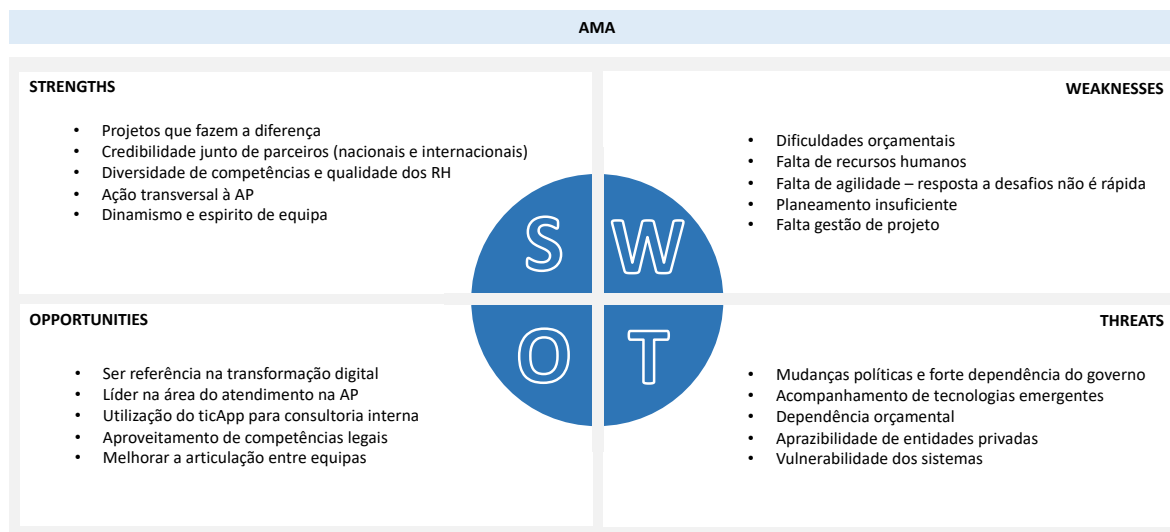
- Provide legal advice to the AMA board of directors and multidisciplinary departments and teams;
- Organize and monitor public procurement processes, developing negotiation processes that lead to rationalization and reduction of charges;
- Collaborate in the elaboration of legal diplomas;
- Intervene, when requested, in any disciplinary proceedings or inquiries;
- Intervene in litigation proceedings in which AMA is a party.



Annex 2 – AMA's organic structure as published in <https://www.ama.gov.pt>

Annex 3 – SWOT Analysis

Análise S.W.O.T.



Annex 3 – SWOT Analysis developed for AMA by all the directors

Annex 4 - Interview guidelines

1. Did your team have to change capabilities, integrate and develop new capabilities, with the emergence of the pandemic?
2. Which capabilities changed the most, or new capabilities that had to be developed, during the pandemic?
3. How did initiatives in response to the pandemic involve these capabilities?