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Corporate Foresight and Strategic Management

The case of Mota-Engil

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by

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Abstract

Being an increasingly implemented practice, Corporate Foresight CF) can be a benefit and competitive advantage for firms who apply it. Scanning, futuring and reconfiguring represent logical and sequential steps that provide the right structure for a successful application of CF. However, the way that companies manage to mitigate VUCA (volatile, uncertain, complex, and ambiguous) environments and how does it affect their strategic management remains unclear. The purpose of this study is therefore to answer the following research question: How CF influences strategic management? In particular, this study aims to understand if in a Portuguese listed company, CF application is done accordingly to the theory regarding each step but also how and if it affects their strategic management. To collect answers to our questions, a study case of Mota-Engil was conducted through an interview guide. The conclusions are that there are great basis of CF application and that it is considered as an integrated part of the strategy instead of impacting it but that the company needs to acquire more theoretical knowledge to combine with its experience in order to get more successful results than it already has.

Keywords: CF, strategic management, case study, Mota-Engil, Portugal

Words: 7525

Resumo

Sendo uma prática cada vez mais implementada, a Prospetiva Empresarial CF) pode ser um benefício e uma vantagem competitiva para as empresas que a aplicam. *Scanning, Futuring* e *Reconfiguring* representam etapas lógicas e sequenciais que fornecem a estrutura certa para uma aplicação bem-sucedida de CF. No entanto, a forma como as empresas conseguem mitigar ambientes VUCA (voláteis, incertos, complexos e ambíguos) e como isso afeta sua gestão estratégica permanece incerta. O objetivo deste estudo é, portanto, responder à seguinte questão de pesquisa: Em que medida é que a prática de CF influencia a gestão estratégica? Em particular, este estudo visa compreender se numa sociedade cotada em Portugal, a aplicação de CF é feita de acordo com a teoria relativa a cada etapa, mas também como e se afeta a sua gestão estratégica. Para coletar respostas às nossas perguntas, um caso de estudo da Mota-Engil foi conduzido através de um guia de entrevista. As conclusões representam que existe uma grande base de aplicação de CF e que é considerado como uma parte íntegra da estratégia em vez de impactá-la, mas que a empresa precisa adquirir mais conhecimentos teóricos para combinar com sua experiência, a fim de obter resultados mais bem sucedidos do que já tem.

Palavras-chave: CF, gestão estratégica, estudo de caso, Mota-Engil, Portugal

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Introduction

CF has been more and more implemented among companies nowadays. Actually, this practice is not new. Certain steps that compose it are carried out by companies since the 60's, namely when talking about prospective that is something that most companies perform. This prospective component, contrarily to CF, concerns a more financial type of foresight involving prospection of numbers and consequently budget management. What is new is the alignment of the three steps of *scanning, futuring and reconfiguring* (Fergnani et al., 2020).

CF is a growing subject regarding practice and trend-wise as slowly, companies are starting to understand the need of this implementation for their growth.

Many authors attempted to define this concept in the last decade (Rohrbeck et al., 2015). This definition explains in a clear and distinct way what does this practice represent: it is the "capability of an organization to interpret changes in the business environment, outline and evaluate plausible future based on these changes, and to use that information for sustainable competitive advantage". (Fergnani et al., 2020).

However, there is still a lack of knowledge, lack of searching and reading documentation regarding this matter. A proof of that lacune can be exemplified by the failure of thousands of companies during the pandemic that could have been avoided or attenuated if the idea of staying home being mandatory was put on the scene as a potential future scenario once in the human existence (Fergnani, 2020).

Big and maybe listed companies are the most probable ones to try implementing these practices due to the need of constant and "mandatory" progression and evolution but also regarding the amount and diverse resources at their hand. It is possible to find online 10 to 12 study cases (Rohrbeck et al., 2015, p.14) regarding the practical application of CF but neither one of them regards Portuguese Companies or considers recent pandemic developments that changed our way of living even though some listed companies such as GALP or Sonae work with CF specialists.

This work attempts to build a state of art of CF literature regarding what it really represents and how is it mirrored in the practical way. This thesis also attempts to understand what are the existing CF practices that a Portuguese listed company has implemented to deal with a volatile, uncertain, complex, and ambiguous (VUCA) environment and if it has been done according to what the literature advices to. In addition, this thesis aims to understand how CF impacted strategic management in the studied firm. The research question is, therefore, how does CF influence strategic management?

In the first chapter, a literature review is performed regarding CF 's definition evolution, how it is supposed to be applied in companies and consequently scanning, futuring (in this case scenario planning) and reconfiguring. At the end it is possible to find a theoretical framework enouncing the key elements of CF and strategic management. In the second chapter, the methodology chosen, and its advantages are revealed as well as data collection and analysis techniques. The nature and type of study are also presented followed by the interview guide. In the third chapter, it is possible to find a contextualization of the studied company, Mota-Engil as well as the results of the interview. The fourth chapter is composed by the discussion of previously presented results. The fifth chapter includes the conclusion of this work: the theoretical contribution regarding the proposed main question on how does CF influence strategic management, the implications, the limitations of the research as well as suggestions for further research.

Literature Review

Purposes

This literature review attempts to understand how the concept of CF evolved in time to become what it is today. It also reviews how is each step of the process supposed to be implemented, in order to compare further ahead if the studied company performs it accordingly.

CF Definition

As a concept, CF has a very ascendant evolution. Several authors (De Toni et al., 2020b; Rohrbeck et al., 2015; Tsoukas & Shepherd, 2004) have tried do define it since 1997. In 1997, the concept and the practice were not as complete as today but some authors like Slaughter (Rohrbeck et al., 2015) started speaking about Strategic Foresight. At the time, it was already conceptualized as an organization ability, component that can still be found in more recent definitions. Slaughter defines strategic foresight as "*the ability to create and maintain a high-quality, coherent and functional forward view and to use the insights arising in organizationally useful ways; for example: to detect adverse conditions, guide policy, shape strategy and to explore new markets, products and services.*" (Rohrbeck et al., 2015, p.5.). Seven years later, the conceptualization of it as an ability is still actual as Tsoukas and

Sheperd (Rohrbeck et al., 2015, p.6.) define CF as "*the ability to see through the apparent confusion, to spot developments before they become trends, to see patterns before they fully emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events*." Here the *insights arising* become *developments, patterns.* But it is also possible to detect a more tapered definition regarding the goal of the practice. While Slaughter (Rohrbeck et al., 2015)defended the need to use it in organizational useful ways and giving examples, Tsoukas and Shepherd (2004) prefer to highlight the need to understand important characteristics that are able to mold the future. In the same year, both authors collaborate again on an article where they define organizational foresight as the "*organizational ability to read the environment - to observe, to perceive - to spot subtle differences*" (Rohrbeck et al., 2015). They also point out the fact that the perception of past and present developments is extremely relevant to develop this ability. Besides, they introduce a very important notion regarding the goal of this process which is "*being more prepared to engage with whatever may happen*" instead of making precise predictions of the future. This literature sets an important difference and notion within the concept (Rohrbeck et al., 2015).

However, some authors continue defending the anticipation of the future as the main goal. In 2010, Battistella and De Toni define CF as "*a set of methods, processes, actors and organizational forms that permit to research and anticipate the* *future"* (De Toni et al., 2020a). Nevertheless, the evolution of markets and business practices evidenced an evolution of the conceptualization of CF.

Some traces of this evolutive heritage can be identified in Rohrbeck, Battistella and Huizingh's work (2015). It is possible to highlight their definition as one of the most extensive and complete: "*Corporate foresight is identifying, observing, and interpreting factors that induce change, determining possible organization - specific implications, and triggering appropriate organizational responses.* " The evolution of the goal of CF practice is also notable. Being prepared for whatever happens becomes laying foundations for future competitive advantage. There is an awareness that implementing CF practices represent at some point, gaining an advantage comparing to other competitors that may not implement them.

CF Application

CF requires certain conditions to be well and successfully implemented. One of the key characteristics of this process regards a participative and integrated component. There is a need of implementing this process in a participative and interactive way (Fergnani et al., 2020) integrating different employees on different hierarchical levels but also external interested people such as stakeholders (Fergnani et al., 2020). By assuring this first condition, communication between peers needs to be structured to keep concentration and focus on the main goal (Oner & Gol, 2007). Communication means dialogue between the people concerned to reach a consensus by negotiating (Fergnani et al., 2020; Oner & Gol, 2007). The required structure and focus can be achieved through a *specialized team* with some foresight experience and knowledge to gather future intelligence (Rohrbeck et al., 2015) and provide a more precise input to the process.

According to Fergnani, Hines, Esposito and Lanteri (2020), we can only identify a clear and complete practice of CF when companies implement the three phases following each other: scanning, futuring and reconfiguring. However, it is important to keep in mind that scenario planning is not the only futuring method. (Fergnani et al., 2020). It is only one among others, but it is the one analyzed in this paper.

The need to specify the steps of the process emerges from the recurring confusion of CF and corporate planning since both can be connected and complementary (Fergnani et al., 2020).

Table 1. Differences between corporate planning and corporate foresight

	Corporate planning	Corporate foresight
Epistemology	The future is predetermined and predictable	The future is open to possibilities and can be shaped
Outcome	Single-point estimate	Complex scenarios
Time horizon	Short-term future (1-5 years)	Long-term futures (5-50 years)
Involvement	Upper management	Participatory
Prioritised interests	Interest of shareholders	Interests of a variety of stakeholders
Methodology	Variation in mathematical models, contingency planning, decision trees	Scenario planning, roadmaps, Delphi surveys, backcasting, causal layered analysis, etc.

Source: (Fergnani et al., 2020)

When correctly implementing CF, the organization needs to be aware of the different and convoluted possibilities that might happen and potential change of the future instead of following their prediction stubbornly. The participatory component mentioned above also differentiates CF from corporate planning that mainly involves top management positions and praises for the shareholder's interest instead of reaching other stakeholders. At the end, the methods used to get through the process are also different and outputs will not be the same (Fergnani et al., 2020).

However, we can't forget about the recurring component. CF needs to become a recurrent practice within the company and not a yearly event. It is important to monitor the outputs and understand if molding our firm and its strategy to the new present and potential new futures is required.

This implementation is necessary and has several benefits for firms. It firstly helps the company to mitigate a VUCA environment. Companies need to be agile to deal with volatility, to practice information and knowledge management to deal with uncertainty, to restructure to deal with complexity and experiment to deal with ambiguity (Kaivo-oja & Lauraeus, 2018).

This CF practice allows firms to gain competitive advantage since when not correctly applied, it can lead to the entry of other competitors. It creates *"ready-to-market prototypes"* (Fergnani et al., 2020) that increases the capability to face VUCA environments (Fergnani, 2020d).

In fact, firms are getting more familiar with CF and creating jobs in scenario planning. However, there is an issue regarding how the concept is applied (integrated vs. fragmented) which has an impact on its success within the organization (Fergnani et al., 2020). Rohrbeck, Battistella and Huizingh (2015) defend that CF as an integrated organizational practice is the best way to acquire new capabilities and consequently competitive advantage. However, during the Covid-19 pandemic, several firms didn't know how to shape and adapt in a proactive way to potential impacts mostly due to a "it's too late" way of thinking (Fergnani, 2020c). Integrative CF allows firms to reconfigure their strategy based on the analysis of business opportunities suggested by future possibilities. This is especially true when an uncertain environment becomes a constant reality of the business world. However, it needs to be performed in the right way.

Scanning

Scanning is the first step to implement CF. It represents *"detecting patterns and trends in the business environment that can point to change, discontinuities, or disruptions that could impact the future"* (Fergnani et al., 2020). However, it is not always a general agreement to call them forces, they can also be called trends, drivers or driving forces (Fergnani, 2020b). We can consider that industry foresight is a part of this first step. Hamel and Prahalad defend that it is based on *"deep insights into trends in technology, demographics, regulations, and lifestyles"* (Hamel & Prahalad, 1996, p.126). It means we don't scan only the industry but the world and its happenings as a whole.

Scanning regards identifying and collecting data which may give hints about how will be the future shaped, hints divided between both weak and strong signals (Bereznoy, 2019). Weak signals are highlighted by horizon scanning academics which is a different concept from environmental scanning.

Environmental scanning is the constant search for forces of change in the environment that can't be controlled by firms. It is more compatible with CF than with governmental foresight. The tendency will be to retain those persistent forces that are present in the environment who will potentially change the future. (Fergnani, 2020b)

Horizon scanning defenders believe in long-term analysis and that improbable scenarios may happen. This is where weak signals enter. Really rare but which have already happened once in the past who may happen again (Fergnani, 2020b). The actual Covid-19 pandemic is a great example of a weak signal before 2020, it became a force of change in 2020 and beyond.

Actually, scanning is not a recent practice itself. According to Chermack, it was already a common process to systematically scan in the 70's and 80's (Chermack, 2011). This is why it is usual to find firms practicing scanning in their daily activities. STEEP, PESTEL and other frameworks are regularly used to scan the environment but also customer needs (Vecchiato, 2012). They are tools that firms use to perform either environmental scanning or horizon scanning (Fergnani, 2020b).

However, if companies apply a more environmental scanning it does not mean that they should not apply horizon scanning. Both practices have something to offer, focusing both on short and long-term future to put together the most accurate scenarios. Fergnani, Hines, Lanteri and Esposito highlight the need to *"scan widely, vary the scanning talent pool and decentralize scanning tasks"* (Fergnani et al., 2020). This means that it is required to open the range of data collected to infinite possibilities and not only to the industry we operate in. Valuable information can be identified and used to proceed with the next steps. The integrative and participative component can be depicted here. It is productive to have different people performing this scanning task who will be *"attentive to different signals"* (Fergnani, 2020b) and it is also valid regarding their positions within the company, sharing this process with people on different hierarchical levels.

But there is a key notion to remember which this process is not an independent one but that it is a part of a whole application of CF and that there are other final goals, such as scenario planning.

Scenario Planning

CF practices are thus important before and during crises type of events. In the particular case of Covid-19 pandemic, its unpredictability in terms of duration made CF a must for firms to conceive alternative scenarios and attempt structural changes.

Futuring (Fergnani et al., 2020) as some may call it consists in creating potential futures thanks to the information collected while scanning. There are several methods to perform this step, but this thesis analyzes scenario planning. This practice exists as a tool since the 70's to deal with uncertainty (Chermack, 2011). Since that time, more and more companies have been implementing this practice such as UPS, Disney, or Shell. This last one, orchestrated by Peter Schwarz (Schwartz, 1996) is considered as a pioneer project in scenario planning and the application it has performed with it is seen as a model for other companies. The need to practice CF emerged from the fact that traditional forecasting tools were not enough anymore to support strategic planning (Rohrbeck et al., 2015). The first step in this model regards identifying the forces of change like every other CF process. The next key step is to divide those forces into *"pre-determined elements"* which represent more stable, predictable and fix events more or less expected and *"critical uncertainties"*(Fergnani, 2020a) unexpected like Covid-19 for example. At last, it is required to create several scenarios by communicating within the implicated team, in a participative way and trying to understand how the forces would impact the activity in several scenario and trying to improve the scenarios based on those answers. However, it is not the only model we can look up to: The 4 archetypes and 2x2 matrix are also valid methods. (Fergnani, 2020a)

The 4-archetype method, implemented by Jim Dator (Fergnani, 2020a), father of the future studies stream of thought, is based on four steps. The first step continues being the same as the model above: searching for the forces of change that may have an impact on the future and then understanding how they might evolve. The third step is extremely important since it is based on the 4 archetypes: "*continued growth, collapse, discipline, transformation*" and their relationship with those forces of change. Ultimately, scenarios are created on the basis of this previous analysis and on reliable data.

The third method, named 2x2 matrix also starts by the identification of driving forces individually and in groups (Chermack, 2011). Then, these forces are grouped according to their level of impacting each other and we evaluate their behavior upwards or downwards. The goal is then to find the most impactful and uncertain behaviors. The process then implies to create a matrix with those behaviors that gives birth to scenarios.

The three methods always start by the same task: either scanning or using that information collected (Dadkhah et al., 2018), which means that it is a logical sequence for these two steps to be connected.

The key tip here is to take some previous time to analyze well the available methods for them to be applied in an organized and sequential way. However, it is by experiencing it that the firm's knowledge will become higher and more efficient (Fergnani et al., 2020).

As already mentioned above, scenario planning is not the only method that can be used in this *futuring* phase, and it is not always the most adequate one for every context.

Reconfiguring

After identifying the possible scenarios, it is essential to use them to mold the strategy of the company and *"guide systematic strategic change"*(Fergnani et al., 2020). In order for scenarios to be transform in strategy, some priorities need to be agreed on with measurement of goals to attain strategic objectives (Bereznoy, 2019). This step is what characterizes CF as a dynamic capability since it represents the ability to reconfigure the strategy and using knowledge to adapt to the changing environment (Fergnani, 2020d). This reconfiguration is extremely important because it helps keeping competitive advantage on the long-term. The real issue regarding reconfiguration is how to use information collected from scanning and futuring the smartest way to perform a precise reconfiguration of the strategy (Hammoud & Nash, 2014). Some companies tend to transform those inputs in documents or reports to diffuse within the company. This will guide the decisions and strategic options to be followed in each segment of operation to maintain competitive advantage. Scenarios may also give hints on which areas are worth to be bet on and invested in (Vecchiato, 2012). As defended by Fergnani et al. (2020), there is a deep need to keep a strong connection between the foresight and the strategy application and to monitor it to understand if gaps are being filled or not. This is a key characteristic together with repeating those exercises several times a year which is why having a specialized team can be a great asset (Fergnani et al., 2020).

Theoretical Framework

In order to answer the main question: how CF influences strategic management, it is important to define the key elements of CF and strategic management.

Corporate Foresight	**Strategic Management**
Method to prevent the future	Establishes and drives the organization's strategy
Sequenced steps	Goal establishing
Organizational ability	Defines methods to achieve goals
Integrated and participative practice	Tends to involve more top-tier positions
Supports Strategic Management	Supports decision-making

Source: Elaborated with bibliography used for literature review.

Chapter 2
Methodological Framework

Being a descriptive subject to be studied, a qualitative approach to this matter seemed more appropriated than a quantitative approach. This is why it has been conducted with a descriptive case study (Yin, 2009) achieved through an interview with a representative of the studied firm to understand how does CF influence strategic management.

According to Creswell, case study is *"a qualitative approach in which the investigator explores a real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports, and reports a case description and case themes). The unit of analysis in the case study might be multiple cases (a multisite study) or a single case (a within-site ca*se)." (Creswell, 2013)

The diversity of possibilities within a case study approach defines how advantageable it can be. This diversity relies on the different type of information that can be used but also on the analysis itself that can englobe one or several studies. This method also integrates herself well in the time frame available for this research, at least in this singular case and interview frame. However, case study research through interview integrates the fact that the output relies on the interviewee that answers what the interviewer wants to hear according to its questions. Same as the documentation, in this specific case, the company releases the information she wants regarding strategic plans for example.

According to other literatures (Rohrbeck et al., 2015), the authors that attempted to do similar investigations with other companies like Daimler (Ruff, 2015), this method showed strong and interesting results.

This interview was conducted under a signed consent form and with an interview guide. However, it is not the only source of data. The website and public strategic plan of Mota-Engil were also considered for several comparisons and analysis for the discussion of the results. (Mota-Engil, 2021b)

The collected data was also analyzed through manual coding. Each theme within the conceptual framework was represented by a color. After coding the text, informations both from the results of the interview and from the literature were color grouped. The conclusions of each theme were written through comparison between results and literature.

Nature and type of study

This study of qualitative nature inserts itself in the need of gathering information regarding Portuguese listed companies and their practices of CF. This need is sustained by the fact that there is no documentation on Portuguese companies regarding this practice due to two factors: there is a small number of firms implementing them and confidentiality makes exposition of practices extremely rare.

The selection of potential participants was done through contact of all PSI20 companies in Portugal. Among those listed companies, it was possible to present the interview guide to Mota-Engil, a Portuguese construction company. The representative participant, Luís Silva, is responsible for corporate areas like management control or risk area and was the maestro of the implementation of the recent strategic plan.

Interview guide

This study has as main goal clarifying how CF influences strategic management in a large and listed Portuguese company: Mota-Engil. In particular, it aims to understand how CF was implemented to mitigate the VUCA (volatile, uncertain, complex, and ambiguous) environment, but also how it has impacted strategic management of this company.

The investigation was oriented by a previously created interview guide, based on the literature gaps:

1. How do you define CF?
2. Since when does your company practice CF?
3. What were the reasons that took your company to study diverse scenarios?
4. Until what point was there an exit of the comfort zone of the company during the reflection?
5. How was CF applied and with which goals?
6. Do you consider that the company has applied CF in an efficient way, allowing the company to resist to instability in an environment propitious to collapses and unpredictable adversities?
7. How is CF important in the actual business model of the company?
8. To what extent did it affect the strategic management of the company?
9. How did the application of CF change the process of value creation either regarding product (value curve) or enterprise value creation?
10. To what extent did it affect decisions between actual and potential business opportunities?
11. What are the benefits that stem from the application of CF that you consider relevant for future?

Chapter 3

Contextualization of Mota-Engil as a listed PSI20 company

Mota-Engil is a Portuguese company created in 1946, in Angola by the Mota family. Before becoming one of the biggest in construction, their first activity was based on exploration and transformation of wood. In 1987, they became a listed company and their growth kept blooming. Several moments in their history can be seen as crucial for it. In 2000, the two firms "Mota e Companhia" and "Engil" fused into what we know today as Mota-Engil. Having the chance to enter PSI20 companies and welcoming CCCC Chinese group in their capital made it possible for them to become one of the 25 biggest firms in constructions operating in 5 different business areas: Engineering and Construction, Environment and Services, Transport Concession, Energy and Mining and Residues Management. In 2005, they became a part of PSI20, an index that groups the 20 biggest companies listed in EuroNext Lisboa.

Their first strategic plan was launched in 2008 "*Ambição 2013*" as the first mark of a strategic organization within the company. (Mota-Engil, n.d., 2021a)

Mota-Engil - Interview Results

In this section, the case company – Mota-Engil – will be presented considering primary data from the interview and secondary data, that is, publicly available documentation.

Luís Silva, representative of Mota-Engil, explains CF in the following way: *"There is no future for any company without a forward-looking strategic reflection, without planning on what will be the sectoral, economic, social framework... of the near and far future. No company survives if it stops in the present or if it only looks at the past. Past results do not assure future results. An attitude of permanent looking to the future, and of roll back of that future constitutes the core of the business prospect and is certainly the only way that can make companies "eternal", always anticipating the challenges and preparing their people, its means, its processes for the "next day"."*

Mota-Engil implemented CF with their first strategic plan "*Ambição* 2013" in 2009/2010 then actualized it in 2013, 2021 and will be updated again in 2026. Their goal has always been to predict and organize the group's strategy according to the prevision of conjunctures.

As in any other area, the evolution of the market needs to be observed and consequently peers, competitors either national or international. Due to the nature of the businesses of the Mota-Engil group, there are several areas where they operate where the study - sale path can take several years. Luís explains that

"In Africa for example, it can take more than a decade. The study of markets is very important as it allows to understand which projects are being implemented and studied either by public or private entities in order to identify growth opportunities". Indeed, the company managed to identify new business opportunities in the main geographical locations they operate in thanks to understanding global trends with impact on society such as climate change, urbanization, or population growth. To predict the future is essential for positioning on what type of markets, constructions, and type of resources to be in possession of regarding future needs. Luís Silva defends that *"if it is not implemented, answers are late in a market that possesses several big international companies, but which is also very open in Africa or Latin America but very closed in Europe".* On the contrary of what we might think, it is not the technical or operational execution that makes the difference, it is mandatory to know well, understand and *"try to anticipate by doing the roll-back exercise of what would potentially happen in the future to take decisions*". It is really a key point trying to mitigate the uncertainty of the market and what might influence it. The time that projects require to be developed inputs even more uncertainty which calls for an additional need of CF as "*the construction area has different times of maturation, it is not like an open shop waiting for customers*". Mota-Engil manages to averagely study most probable scenarios of the markets it operates in but also diversify itself into different markets. This analysis results in attacking new markets and reducing others. Until 2026, "*our plan is to bet more on*

the environment but also on infrastructure concessions and industrial services". Sustainability and Innovation are also paths that Mota-Engil will try to put as maximum priorities.

At every step of CF practice, Mota-Engil claims to perform exercises out of their comfort zone. Luís Silva defends that *"it is enough to look at some of the structural lines of the strategic plans to see this step out*". There are some areas that are central in some plans, and which are no longer central in others even if the firm is a construction and infrastructure firm. This doesn't mean that their backbone changes. In view of what Mota-Engil was before these exercises of CF, before the strategic plan combined with the growth of the group, it had to do with stepping out of the comfort zone of *"being a construction company to an infrastructure management company"* that in many cases became more than construction, but also management. It resulted in a reflection that the balances between all aspects are fundamental.

Luis Silva keeps on insisting that *"these practices are a part of the management model"*. The budgeting and strategic reflection processes conclude in an external presentation and is not static in time. Once the plan is approved and published it is assisted in a regular way to analyze the path toward fixed goals and if new predictions are making trajectories change. It is impregnated in the company's day-to-day in all business units. These implementations have always been experiences to try in several ways: with consulting companies in one specific geographic or business area or all internally.

The company estimates that the implementation of CF has been really effective and that a proof of it has been this pandemic era. This period of time has made Mota-Engil reflect even more about what could exist. They also took the decision to delay the strategic plan in order to add more plausible analysis of the environment but also because of alterations in the shareholder structure. Luís Silva explains that *"the pandemic did not mean to forget all the past work and publish a plan in a year, it actually made foresight exercises happen throughout the year and not only two times".* However, this was not seen as a difficulty since it is already a habit to perform them.

CF is extremely important within the business model of the company since it is an "*integrated part of it and of the strategic management*", so it does not affect it but is a part of it. There are monthly monitorizations of all units regarding strategy. If this had not been implemented in this way, the pandemic would have been catastrophic due to several of the 30 countries they work in having closed from a day to another, either public or private. In this way, it was crucial to be focus on what could happen and what alterations implicated in the group's balance since it is made of several companies where each count. It was great to develop the capability to process a higher and more detailed level of predictions, information compilation and anticipation of a year that ended up being a, of course, "*less good year financially*" but already predicted really early.

For a listed company, value creation is extremely important regarding all stake and shareholders. In this way, the strategic reflection and analysis tries to understand how the group can create value for all. The motto is "*Deliver value for all in a sustainable way*." Which declines in creating value in ascension on the curve that is sustainable and deliverable to all. In construction, "*competitors of today are tomorrow's partners*". Creating value is the center of the reflection.

Each plan is an update of the strategy and not a renovation. Upon the reflection, the previous plan is used to mold future decisions in combination with predictions. For example, reducing to 11 the actual 20 main centers.

The whole implementation is seen as a process. In the beginning, it was only budgeting with a less structured strategic part. Today "*there is a process, a structure which is indispensable in the construction sector*" and niches that Mota-Engil operates in where high amount of assets and resources are being used. Without these practices and reflections, anticipation would be hard, and bets would not be the right ones. Mota-Engil claims differentiating herself from other Portuguese companies that have disappeared during the last years. CF is definitely a key success factor of the company.

Chapter 4
Discussion

In order to answer the main research question on how CF influences strategic management, the results of this research will be discussed in this chapter according to the theoretical framework. At first, it is important to highlight that the need of the company executing CF emerges from having obsolete methods at some point such as budgeting but also of sustaining the execution of a strategic plan (Rohrbeck et al., 2015). Strategy and CF are connected in several ways.

In this case, the company uses the term frameworks or trends to define the driving forces, forces of change mentioned by some authors. The definition given by Luis Silva has high similarities and matches with definitions of Hamel and Prahald (1996) but also Slaughter's definition. However, there is a difference when it comes to believing that the past and present don't secure the future. Of course, they don't secure it by themselves, but they are to be considered in the analysis (Rohrbeck et al., 2015).

A consensus between literature and this study case is the prevention instead of reaction. It is a correct way of thinking and the proof of it is the amortization and success of these practices during the pandemic but more than all, the competitive advantage that emerges since their answers become quicker in a market with other big competitors.

The company obviously tries to mitigate uncertainty and it is a matching point with what the literature suggests since there is an information collection to deal with it and inclusive and some restructuration has happened to deal with complexity of the changing world. There is a true will of experimenting which allows to gain knowledge and as said before, it allows to fight against uncertainty (Kaivo-oja & Lauraeus, 2018).

Mota-Engil has made an analysis that not only is the world uncertain, but their area of construction is even more uncertain due to the time that projects take to be developed. There is a true concern of attempting to make prediction and organizing the strategy of the company around them.

There is a slight feeling, still, that predictions are not made to be ready for whatever could happen but more for guiding a strategy, which is also a valid principle (Rohrbeck et al., 2015). It implies an application of CF but with a different purpose than the usual one. They end up betting on certain areas more than in others because they are predicting more rentability for those.

However, there is no division or screening of the tendencies or driving forces, they don't either recognize weak and strong signals, but it is possible to say that they follow an environmental scanning method. Regarding futuring, we can observe a more similar model to the Shell regarding simplicity but without the above enounced components.

Their answer is to diversify their markets to compensate potential losses by investing in others and increasing their presence. For them, this is a step out of their comfort zone. If sustainability and environment are becoming a priority it means that Mota-Engil is not only worrying about potential industry foresight but also about the world and it is a statement supported by the definition of CF given by Luis Silva regarding social or economic factors.

These exercises are a part of the company's DNA, they are performed several times a year and transferred to all business units. It is an integrated part of the business model. It is also undeniable that it is a participative process either because it is done within a team, sometimes with professionals but with the goal to create value for all stake and shareholders, which is also a mark of that integration.

There are traces of CF features, especially regarding scanning and reconfiguring but it could be somewhat more probing than it is. As understood, the company performs several predictions as a whole but project maybe one scenario per area where they operate in. However, they don't see it as a liability since all areas have the same weight. Plus, the areas they operate in are areas with restricted probable scenarios. For example, for habitational construction, it is less probable than in the next 5- or 6-years people decide to quit living in buildings, especially with the population growth.

However, they were not ready for some impacts of the pandemic regarding several lockdowns in most of the countries they operate in. They were much more reactive at this point than preventive and proactive. (Fergnani, 2020c) This also shows that Mota-Engil should start more horizon scanning to combine with environmental, to be able to foresight more surprising futures.

Among all predictions and taken decisions, the company has decided that it was not necessary to change the whole strategy because of the pandemic and implement a new one but to mold it keeping the pre-pandemic goals because they understood that at some point societies were going to learn how to live with the situation. They knew from an early hour that 2021 was not going to be a fantastic year and it was useful to avoid for it to be a catastrophic one and prepare the years to come.

Chapter 5
Conclusions
Theoretical Contribution

This study helped fulfilling the research gap regarding CF application in Portugal by answering the following question:

How does CF influence strategic management?

As mentioned during the discussion, there are some marks of successful application of CF. It is a participatory process, in which are included several people who do a teamwork. This same work has as main objective to create value for all within the organization and not only for the holders of shares but for all those involved in the structure of the company which shows the integration of practice. This integration is also clear due to the fact that this mentality of CF implementation is diffused throughout the organization. CF exercises are performed several times a year and with constant monitoring which allows to shape the strategy more accurately. So, it is possible to realize it's something intrinsic to the backbone of the company. There is a true analysis of the potential scenarios of each area where they operate with a clear objective to mitigate uncertainty not only of industry and the market but of the world at large. It is here that enters a more subjective part that implies to understand that the literature tends to expose the success factors and the steps of application more generally and not applied to a specific industry, which may mean that not all advice is valid for all companies. Here, Mota-Engil argues that the potential future scenarios for its areas are relatively limited. However, this means that they are limited in relation to industry, leaving aside potential forces with indirect impacts. Thus, one can understand that there is a need to practice more scanning horizon in order to be really ready for more unlikely starting scenarios; the pandemic has made rethinking this same need. The lack of triage and grouping of forces into categories may be reinforcing this gap.

We can also highlight the presence of corporate planning characteristics in certain aspects such as (1) epistemology, that is, being more open to various possibilities and not predetermined scenarios and (2) the vision in time that would need to be more in the long term than it already is (Fergnani et al., 2020).

The main conclusion to be drawn is that there is a lack of precision. This can also be seen in the wake of the three steps to be taken, which are in little practical depth.

It is possible to conclude that there is a lot of good practice on the part of the company and, above all, a great desire to make progress in this aspect.

What the company understands by affecting or not affecting the strategy is that they are integral parts. But in a way, it does impact because the strategy is shaped on the basis of the analyses made. The fact that they carry out the strategic plan and hence the need to carry out these exercises shows that both support each other. The application of CF allowed for a better structured strategy and more certainty of walking in the right direction.

Implications

This study can present several implications for various groups of interest. First of all, there are implications for the company itself which, having no specialized team in CF, does not have much knowledge of this literature and what it contains. This study can be seen as an analysis of the strengths and weaknesses of this application and what and how they can improve these processes. What could be beneficial in this case would be hiring professionals and experts in CF to have greater support in the structure of the process but also create teams within the company, specialized in this process. The case of Shell is an excellent model to observe for having been published by someone having participated and been part of the company, who understood the reality of implementing CF.

This study can also serve as an example for other companies in order to understand what they should and should not do when applying these CF exercises, which literature to consult in order to integrate these practices and change their functioning for the better.

Limitations

This methodology had limitations. While it was extremely necessary to collect testimonies from several listed companies, in the beginning, since a portion of their information is publicly mandatory; it was not possible to collect other firm's experience due to several factors. Confidentiality or bigger structures were limitations to the collection of answers. This interview was conducted and discussed with those same limitations.

Suggestions for further research

It was possible to identify three potential future research themes to further deepen this theme. The first of these was to carry out the same study to the same company in a few years in order to understand how they changed their perspective and whether new factors emerged that made them rethink their analysis. Second, it would also be interesting to carry out other case studies on other Portuguese companies, independently without comparative character.

But also why not to carry out a comparative study among several Portuguese listed companies; knowing that some work with specialists, to understand if the preparation and response to adversity was more successful or not. Knowing the increasingly uncertain world companies will keep on facing, knowledge share on CF and its application can be valuable.

It may also be interesting for authors of articles on this subject, especially those who mention advice and practices to follow, to question whether they portray the reality of the markets and take it into account when conducting their research.

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Appendices

Appendix 1: Consent Form

Formulário de consentimento informado

Investigação no âmbito do Trabalho Final de Mestrado em Gestão

CATÓLICA
CATÓLICA PORTO BUSINESS SCHOOL
PORTO

Autora: Andréa Gonçalves Semedo Lennon (Aluna de 2 ° ano do Mestrado em Gestão na Universidade Católica do Porto)

O atual trabalho de investigação, intitulado "*Corporate Foresight and Strategic Management: The case of the largest listed firms in Portugal*" insere-se num estudo que decorre no âmbito do Mestrado em Gestão e tem como principal objetivo clarificar o que aconteceu durante a pandemia nas empresas pertencentes ao PSI20 e de que forma é que o *corporate foresight* foi aplicado para lidar com um ambiente volátil, incerto, complexo e ambíguo assim como este conceito afetou a gestão estratégica das mesmas empresas.

Pretendemos contribuir para um melhor conhecimento sobre este tema, sendo necessário, para tal, incluir neste estudo a participação de empresas pertencentes ao PSI20. A sua colaboração é por isso fundamental.

O resultado da investigação, será apresentado na tese de mestrado orientada pelo professor doutor Ricardo Morais.

Este estudo não implica nenhuma despesa ou risco para os entrevistados, nem para as organizações que representam. As informações recolhidas serão efetuadas através de um questionário estandardizado e de uma pequena entrevista que deverá ser gravada para permitir uma melhor compreensão dos factos.

Qualquer informação discutida poderá ser integrada na tese e por isso, tornada pública. A sua participação neste estudo é voluntária, podendo retirar-se a qualquer altura ou recusar participar, sem que tal facto tenha consequências para si ou para a sua organização. Ao assinar este formulário de consentimento, declara que aceita participar nesta investigação nas condições enunciadas.

Assinatura autorizada por Luís Silva, através da confirmação do OTP enviado para o telemovel: *****9997 e para o email: lui******@mes*.pt.

Selo Eletrónico Qualificado criado pela plataforma SigningDesk. Assinado digitalmente pela DigitalSign - Certificadora Digital, S.A.

ASSINATURA SIMPLES digitalsign

Assinatura: ____________________ Data: __________

Appendix 2: Interview Guide

QUESTIONÁRIO - ESTUDO QUALITATIVO

Investigação no âmbito do Trabalho Final de Mestrado em Gestão

Autora: Andréa Gonçalves Semedo Lennon (Aluna de 2 º ano do Mestrado em Gestão na Universidade Católica do Porto)

1. Como define Corporate Foresight (prospetiva empresarial) ?
2. Desde quando é que a sua empresa faz exercícios de Corporate Foresight ?
3. Quais as razões que levaram a empresa a estudar cenários diversos ?
4. Até que ponto existiu uma saída da zona de conforto da empresa durante a reflexão?
5. De que forma foi aplicado *Corporate Foresight* e com que objetivos ?
6. Considera ter sido aplicado de forma eficaz; ou seja, ter permitido à empresa de resistir à instabilidade num ambiente propício a colapsos e eventualidades imprevisíveis ?
7. Qual a importância do *Corporate Foresight* no modelo de negócios atual da empresa ?
8. Em que medida afetou a gestão estratégica da empresa ?
9. Como é que a aplicação de *Corporate Foresight* alterou o processo de criação de valor seja a nível do produto (curva de valor) ou a nível de criação de valor da empresa?
10. Em que medida afetou as decisões entre as atuais e potenciais oportunidades de negócio ?
11. Quais são os benefícios que decorrem da aplicação de *Corporate foresight* que considera relevantes para o futuro ?