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**Digitalization for the better? A case study of the role of MA in a dynamic capabilities process for digital transformation.**

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**University**

School of Business, Economics & Law  
University of Gothenburg

**Author**

*Sumit Sharma*

**Supervisor**

*Christian Ax*

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Sumit Sharma

## **Abstract**

Dynamic capabilities are the antecedent of organizational and strategic routine by which managers alter their resource base to generate new value which creates strategies. The role of management accounting has largely been overlooked in the sense that previous literature has delineated its capacity to aid with strategic decision-making by moving away from its bean counter stereotype. Studies have shown through dynamic capabilities processes of sensing, seizing & reconfiguring that digital transformation can lead to strategic renewal for the firm which creates value for the firm's business model.

This study aims therefore to explicate the role of management accounting in dynamic capabilities for digital transformation in hopes to contribute towards the strategic management accounting literature. A case study was performed on a shipping firm by investigating two digitalization projects, EDI & API, in order to gain a perspicuous understanding of the dynamic capabilities stages and the pertinence of management accounting techniques, tools & systems (MCS) throughout the stages. The empirical findings from the case studies are congruent with the theoretical framework which implies that management accounting tools do facilitate the integration of different departments and can aid with strategic decision making & objectives. Management accounting alone however is not adequate to contribute towards strategic decisions, the scope of management accounting has been expanded through the implementation of the digitalization projects in order to achieve digital transformation. The case study thus demonstrates the mindset on which management accounting tools & techniques are built on in order to gain a strategic advantage. There is therefore potential to investigate the mindset in order to see how management accounting can differentiate within certain industries.

**Keywords:** Digital transformation, Management accounting, Dynamic capabilities, EDI, API, MCS, Sensing, Seizing, Reconfiguring.

## **List of Abbreviations:**

MA - Management Accounting

MSC - Management Control Systems

B2B - Business to Business

BMI - Business Model Innovation

EDI - Electronic Data Interchange Interface

API - Application Programming

ERO - European Regional Officer

RBV – Resource-Based View

NPD&D - New Product Design & Development

R&D - Research and Development

UAT - User Acceptance Testing

SIT - System Integration Testing

KPIs- Key Performance Indicators

IMA - Institute of Management Accounting

PPS - Profit Planning Systems

AI - Artificial Intelligence

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# Introduction Chapter 1

*The purpose of this chapter is to present a transparent introduction & background of the research topic. This will then be followed up with a problem discussion and contribution where dynamic capabilities in relation to the research topic will be discussed with the intention of identifying a new research opportunity through the use of earlier literature. Lastly, this chapter will conclude with a research question.*

## **1.1 Introduction to dynamic capabilities & digital transformation**

Digitalization initiatives are an important trend that has contributed towards increasing efficiency in several firms, the use of digitalization has become a means to decrease their costs, or increase internal effectiveness, and decrease information asymmetry (Gerakoudi-Ventouri, 2022). Not every firm however is able to successfully implement a digital transformation, an article written by Morgan (2019) delineates that companies such as Procter & Gamble and Ford have at some point failed to do their digital transformations. It is simply not enough to be ready for a digital transformation in order to succeed with it. This raises interest in how successful digital transformation is made and how they can structure the business model in a way that will only benefit the firm. An article by Möller et al., (2020) clarifies that digitalization as a concept can be beneficial to the firm's business model and that management accounting has the ability to facilitate the integration of digitalization into the business model. Rogers (2016) mentions that digital transformation at its core is more about the strategic approach rather than the technology. Leaders for instance have to find creative ways to capitalize on new business model innovations so that they can customize and optimize themselves towards customer's needs.

The dynamic capabilities framework is most frequently used from a strategic management perspective because this framework facilitates the explanation of how firms can respond to rapid technological and market changes (Eisenhardt & Martin, 2000). Feiler & Teece (2007) argues that there are three broad areas of dynamic capabilities. The first step is (1) sensing opportunities & threats, this step fundamentally explains how organizations scan the environment externally & internally, (2) seizing opportunities, this step explicates how firms captured the opportunity & (3) the last step is transforming the organizations business model and wider resource base. The literature delineates that digital transformation is not easy to implement, however, dynamic capabilities are able to explicate this process by providing a strategic perspective towards what areas should be focused on in order to strategically create a digital transformation. A recent study from Warner & Wägner (2019) has been useful for this area of research as they have been able to identify the dynamic capabilities which are useful in order to explain the digital transformation of a firm, with the use of their model a new area of research becomes apparent.

## **1.2 Background of strategic perspective through management accounting**

Dynamic capabilities as a theory are based on the resource-based perspective (Feiler & Teece, 2007) management accounting has shown in previous literature that it is known to hold certain

routines and structures which can aid with transforming certain resources (Coad & Cullen, 2006, Frezatti et al., 2011). Previous research such as the one from 'The institute of management accounting' (IMA) (2008) has highlighted that management accounting has certain characteristics which contribute towards sensing opportunities & aiding with strategic management techniques (Byrne & Pierce, 2007, IMA, 2008). Peters et al., (2019) investigates the importance of 'profit-planning systems' (PPS) which belongs to the management control system (MCS) framework, the article provides a perspicuous understanding of how PPS has contributed to the dynamic capabilities framework. As a result, top and middle managers are able to process MCS more frequently in order to create knowledge for planning & managing strategic business change. There are studies that attempt to accentuate the correlation between strategy and management accounting, such as Frezatti et al., (2011) which provides insight to the importance behind strategic planning through budget & project planning in order to see the role of management accounting techniques.

Parida et al., (2019) has clarified in their study that digital transformations lead to value creation through networks, increased collaboration and by reducing costs and improving revenue. The role of management accounting (MA) has been largely overlooked, in the sense that the role has now shifted towards being able to aid firms with strategic choices and moving away from the 'bean counter' stereotype of being cost & report fixated (Wolf et al.,2020, Byrne & Pierce, 2007, IMA, 2008, Drury, 2018). Despite the shift of MA contributing more towards strategic measures & planning there has been no study which delineates the role of MA for dynamic capabilities for a business led motive. Older literature of MA has clarified the use of MA techniques & tools for short term oriented operational activities (Simons, 1995), but does not clarify its use for long term strategic renewal. The orientation away from the bean-counter stereotype allows management accounting to have a more explicit role in strategic development which makes it more useful for long term-oriented techniques (IMA, 2008, Peters et al., 2019).

### **1.3 My purpose and contribution with this research**

The trend which has arisen is that digital transformation is becoming more prominent among certain industries, shipping being one of them (Bavassano et al.,2020). Digital transformations has shown to lead to benefits for the firm in terms of integration, cost reduction, strategic renewal & market advantage, moreover the implementation of digital transformation has been explicated through dynamic capabilities (Parida et al.,2019, Warner & Wagner, 2019). There are however no specific studies which aims to explain the role of management accounting to support the dynamic capabilities perspective for the digitalization transformation from a strategic viewpoint. There are studies on how dynamic capabilities have contributed towards digitalization such as the one from Matarazzo et al., (2021), however there is no study on what the role for management accounting is in conjunction with a business led dynamic capabilities process from a case study perspective.

With this taken into consideration, there is a gap in the literature of what the role of management accountants is in relation to dynamic capabilities for digital transformation. Matarazzo et al., (2021) have performed a study which looks at digital transformation from a dynamic capabilities perspective in order to see how firms can utilize it in order to facilitate a digital



transformation. Warner & Wagner (2019) has presented a model which links the essential dynamic capabilities that explain a digital transformation. My purpose with this study is therefore to understand what the role of management accounting is in a dynamic capabilities process for digital transformation. The study will investigate two digitalization projects which contributed to a digital transformation in a shipping firm. The study is unique in the sense that it will aim to understand how management accounting supports dynamic capabilities process of sensing, seizing & reconfiguring which achieves digital transformation rather than describing how the firm successfully implements a digital transformation. A case study will be performed in order to gain a perspicuous overview of how a firm can utilizes these capabilities.

#### **1.4 Research Question**

In order to research this area and gain a more perspicuous understanding of how management accounting can be used in conjunction with dynamic capabilities process in order to explain the digital transformation which has been made. I will be focusing on the following research question:

*How may management accounting contribute to dynamic capabilities for digital transformation?*

## **1.5 Research Outline**

### **Introduction**

This chapter outlines the background of this study in terms of digital transformation & management accounting, it also includes the purpose and contribution and lastly the research question.

### **Theoretical Framework**

The aim of this chapter is to provide the theoretical framework & conceptual framework which will be used as the basis of this study.

### **Methodology**

This section outlines the methodology used in terms of data collection & chosen study method.

### **Empirical Findings**

This section delineates & concludes the results from the data collection which was performed

### **Discussion & Analysis**

This chapter aims to present an analysis based on the empirical findings and relate it to the theoretical framework.

### **Conclusion, Summary & Recommendations**

This chapter concludes the findings from the discussion & analysis and provides the theoretical & practical implications, contribution and recommendations for future research.

## **Theoretical Framework Chapter 2**

*This chapter provides a perspicuous understanding of the core theoretical foundation on which the research is based on, this chapter will delineate previous research in the following areas; Dynamic capabilities, Dynamic capabilities in terms of digitalization, Digitalization, Business model, Business model & Digitalization, Role of Management accounting in Digitalization. Each of these concepts will be presented separately and be portrayed as derived from previous literature. At the end of this chapter a framework will be presented in order to intertwine and connect the main theoretical findings of previous studies in an attempt to accentuate a guideline for the research. The framework delineates the main findings but is explicitly built on the key areas of the presented literature. The different subsection areas contribute towards an extensive knowledge within the field of dynamic capabilities, digitalization, digital transformation & management accounting and how these fields correlate. It is therefore useful to review each of the subsections below in order to have a clearer understanding of the analysis as these sections will be referenced to later on in the study and act as background information in order to analyze the results.*

### **2.1 Dynamic capabilities**

The article by Eisenhardt & Martin (2000) delineates that resources are considered to be the main aspect of the resource based view (RBV) as such dynamic capabilities is the antecedent of organizational and strategic routine by which managers are able to alter their resource base as well as acquire and shed resources, integrate them together, and recombine them in order to generate new value creating strategies. The resource based view at its core is a framework which aids towards understanding how competitive advantage can be maintained over a longer period of time. The resource based view (RBV) has certain criteria's that needs to be fulfilled in order to create a competitive advantage, there needs to be tangible or intangible assets such as buildings or intelligence which must be heterogeneous or immobile. Heterogeneous assumes that the firm has resources/skills that differ from others in order to outcompete other firms. Immobile means that the resource does not move from one firm to another which makes it difficult to replicate. This then has the attributes of the VRIN resource which means, Valuable, Rare, Imperfect imitability, non-substitutable (Barney, 1991). Dynamic capabilities as explained in the article by Eisenhardt & Martin (2000) is primarily to be able to manipulate the resources which exist in order to create value.

The article emphasizes that dynamic capabilities are often characterized as a unique and idiosyncratic process that emerges from path dependent histories of individual firms. There is a 'best practice' which exists for particular dynamic capabilities across firms that makes dynamic capabilities more sustainable. In dynamic markets, these dynamic capabilities resemble more of a traditional conception of routines, being more detailed, analytical and have predictable outcomes. Whilst in high-velocity markets they are more simple and become highly experimental & fragile (Eisenhardt & Martin, 2000).

The article from Feiler & Teece delineates the three different stages of dynamic capabilities, the first stage ‘sensing’ is to scout the external environment for opportunities, it’s about gaining knowledge of the external and internal environment. *Outside the organization* sensing is an entrepreneurial set of dynamic capabilities which involves getting information about competitors, exploring technological opportunities, probing markets, listening to customers or suppliers, distilling new product and service opportunities, scanning and exploring other elements of the business ecosystem. Sensing benefits from the application of data analytics, it can require management to build models and test different scenarios to ascertain latent demand. The article promotes the idea that leaders need to be able to develop a ‘sixth sense’, an ability to see around corners. Sensing involves activities that create a culture of open communication & knowledge about organizations readiness to capture value (Feiler & Teece, 2014).

Seizing is about inspiring and mobilizing organizations and its complementors to develop organizational and ecosystem readiness to capture the opportunity. It essentially deploys a set of capabilities focused on capturing opportunities and mitigating risks, like gap filling. Capabilities around eliminating irrelevant processes or selling of nonstrategic assets are important. Seizing at its core is explained to be: developing the business, communicating it, aligning stakeholders, raising capital, planning to execute strategy and implementation of organizational or business model innovations. (Feiler & Teece, 2014).

Transforming/reconfiguring is: routines designed to sustain strategic relevance in changing markets through continuous alignment and realignment of tangible and intangible assets. Reconfiguration is referred to as adaptation and repurposing capabilities as external or organizational realities change (Feiler & Teece, 2014).

## **2.2 How prominent dynamic capabilities are in a digital transformation**

The article from Matarazzo et al., (2021) examines digital transformation when it comes to customer value creation for smaller firms and this is done with the aim of understanding how dynamic capabilities can foster digital transformation. In order to conduct this research they performed a multi-case study with 6 different firms. The results from their article provides a perspicuous understanding that the dynamic capabilities such as *sensing* and *learning* capabilities become essential in order to pursue digital transformation, entrepreneurs or family members are the ones who drive these capabilities. *Integration & coordination* capabilities however are natural consequences which are driven more by managers. What they’ve managed to find is that digitalization leads all these firms to create a seamless experience with customers using different channels and touchpoints, both online & offline. Digital technologies have aided these firms to strengthen customer relationships through different marketing channels. Their case study contributes towards better understanding what dynamic capabilities are important for digital transformation (Matarazzo et al., 2021). The different dynamic capabilities are explained to be the following.

*Sensing* is the first of these drivers and is triggered by entrepreneurs or family members, this is because in SMEs the willingness to transform is also the desire of the company's owner. Just like the theory from Feiler & Teece (2014) says delineates, this one is about identifying, developing and assessing digitalization trends as well as technological opportunities in relation to the needs of customers. The ability to spot and pursue digital technologies efficiently is what creates customer value & provides insight towards customer motivations Matarazzo et al., (2021). *Learning* is the second driver and this is about renovation of existing capabilities with new knowledge. If a firm sees an opportunity they need to be able to redirect resources through learning activities that are devoted towards contributing with new solutions and knowledge. *Integrating* is the third, it refers to the integration of knowledge, the redeployed and new knowledge is owned by individuals and capabilities reside at a collective level. This type of knowledge has to be disseminated within a business unit. Lastly, *Coordinating* refers to the ability of being able to organize and deploy tasks, activities and resources into new ordinary capabilities. Practices, processes and structures are included in the reconfiguration capabilities Matarazzo et al.,(2021).

### **2.3 Dynamic capabilities for digital transformation**

The model from Warner & Wagner (2019) sets the foundation for how dynamic capabilities can be used to measure strategic digitalization transformation. The authors have managed to build dynamic capabilities for digital transformation as presented in figure 1.

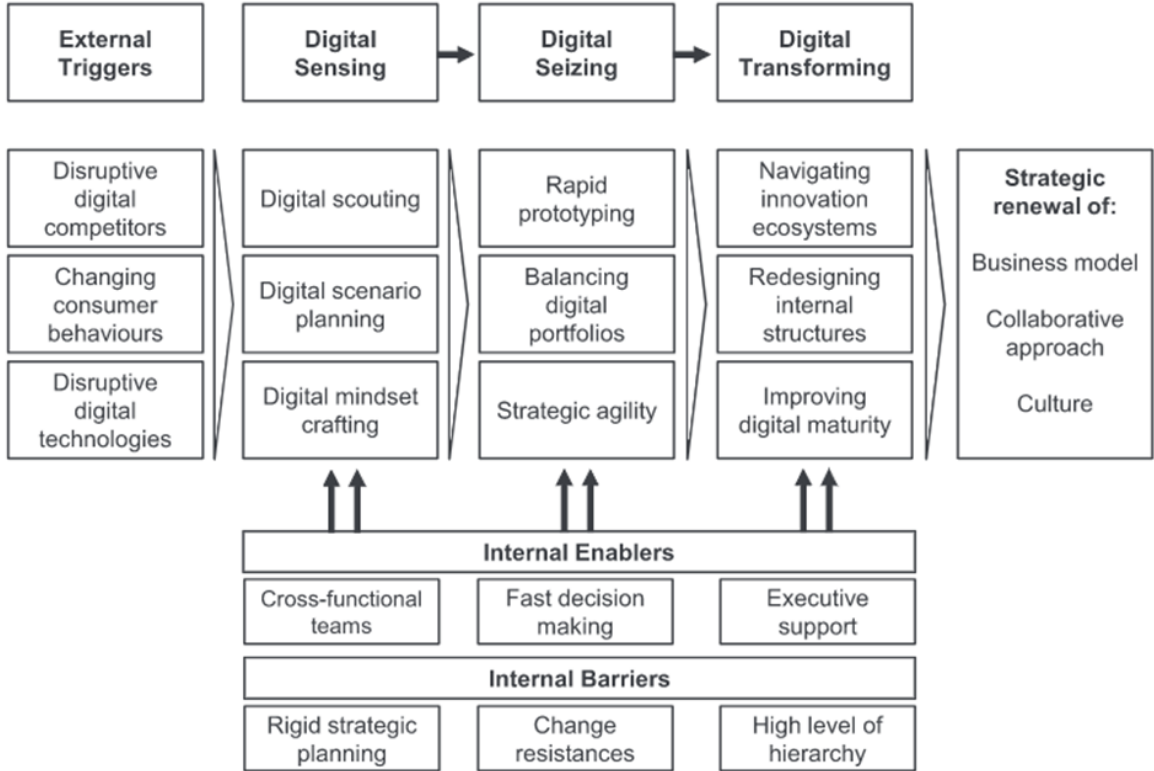
The starting point is represented by external triggers, which can be changing consumer behaviors, disruptive digital competitors and disruptive digital technologies. With these starting points it is possible to build the dynamic capabilities for digital transformation, the model uses three core enables which are: cross functional teams, fast decision making, and executive support, as well as three core barriers which are rigid strategic planning, change resistances and high level of hierarchy (Warner & Wagner, 2019).

*Digital sensing* in the Warner & Wagner model illustrates that the participants they conducted interviews on highlighted the fact that digital technologies challenge the traditional approach to strategizing. The consultants who were interviewed spoke about a need to develop new capabilities in digital scenario planning and digital scouting so they can pinpoint new technological, competitor and customer based trends. (Warner & Wagner, 2019).

*Digital seizing* capabilities was based on the result that participants stressed business model innovation being an essential component of digital transformation. The consultants reports which they viewed reveals that strategic agility is incorporated into the business model so that they may quickly exploit market opportunities. To strengthen this, rapid prototyping provides examples of recent strategic decisions to build digital innovations labs so they can experiment with minimum viable products. Balancing digital portfolios emphasizes new business models innovations, this can be both subscription based or service based models and how these models are balanced with existing business models (Warner & Wagner, 2019).

*Digital transforming* capabilities are built on one of the transforming capabilities, what they found was that the participants discussed strategic issues relating to organizational culture, organizational redesign as well as managing innovation ecosystems. It could be for instance improving digital maturity in order to pursue digital transformation.

All of the incumbent firms they researched involved strategic renewal of business models, they had formulated strategies so that they can redo or renew established business models with digitalization logics. This was done in aim to capture value from new relational & multi-sided value propositions.



**Figure 1. Building dynamic capabilities for digital transformation: A process model.**  
*Source: Warner, K., Wäger, M. (2019) Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal.*

**2.4 Digitalization projects**

As made clear by previous articles, digitalization is able to massively change the way business is performed, this can be through big data, internet of things, artificial intelligence, cloud services and machines (Parida et al., 2019). The benefits of using digitalization is that it improves efficiency by improving the business process, this will also boost productivity. By using modern technology in conjunction with different solutions organizations can create a new value of the data which is being collected, this can reduce the costs of human intervention

having to perform those tasks, essentially automatization (Parida et al., 2019). Technical application can't alone be a sufficient factor if an organization is to benefit from digitalization. The other major factor in order to be successful in digitalization is to innovate the business model so that they are able to realize the complete benefits of using digitalization. The article stresses that digitalization is able to influence business model innovation (BMI) in all of its three different stages, the three stages being value creation, value delivery and value capture.

## **2.5 Digitalization in relation to a business model structure**

The first stage of BMI is the value creation stage, an article by Burström et al., (2021) refers to this to be what the firm offers to their customers or partners, is it a product or service? Digitalization offers the possibility of creating new products & services and business models which can help form partnerships. An example of this could be the relationship between suppliers and customers, modern technology using Artificial Intelligence (AI) would make this relationship more transparent (Burström et al., 2021). Digitalization can result in a collaborative value creation through the firm and their network, this is also achieved by engaging customers in the value creating processes. Internet of things and digital platforms opens up the opportunity to create unique offerings to customers based on the customers or markets specific requirements (Parida et al., 2019).

Value delivery refers to how business activities and processes are used in order to deliver value to the customer (Burström et al., 2021). If a Business model is supported by digital technologies it can be characterized in the way value is delivered to the customer, since digitalization enables significant change in both the internal and external environment. Business models with digitalization support will require new competencies, it can be developed with required skills and competences in organization or even increasing collaboration with others (Parida et al., 2019).

Value capture refers to how organizations revenue streams as well as cost structure. This is what becomes one of the important factors for management accountants when focusing on digitalization initiatives. Digitalization is able to capture value in the firm's business model by reducing the costs and improving revenue (Parida et al., 2019). The article emphasize that firms are able to achieve this third step by integrating digitalization efforts such as AI into the existing business model. This is congruent with what Burström et al., (2021) delineate in their article which is that digitalization offers improvements to the core business process and this in return will lead to minimized costs for the organization as well as increased efficiency.

## **2.6 Role of management accountants for digital transformation & innovation**

Wolf et al., (2020) is an article which demonstrates the ongoing changes towards management accounting as a role and elucidates that the role of management accounting is taking on more of a business partner role but can still maintain the bean counter stereotype in order to act as a hybrid management accountant. It's important for the role of a management accountant to take

an active role in development of IT systems in order to change their practices but also by learning IT, management accounting can broaden their competencies & update frameworks.

Chenhall & Moers (2015) discuss the importance between management control systems (MCS) in order for organizations to address challenges and support innovation. The article delineates the importance of integration and communication so that the different departments can work towards bringing value to the organization. Simons (1995) clarifies that the MCS consists of budgeting, forecasting and result reports, these are all known as Profit planning systems (PPS).

The article from Knudsen, (2020) mentions the tasks the management accountants have in relation to digitalization, it is decomposed into three parts, transaction processing, reporting and decision support. Digitalization has also been able to introduce new KPIs which management accountants could use, since the goal of these new KPIs is to understand the economic performance, the conversion rate could for instance be about the amount of visitors a web page receive, this is a new form of KPI which emerges from digitalization (Knudsen, 2020). Moreover, management accounting is also shifting from forecasting to nowcasting due to digitalization. Nowcasting refers to prediction of the present or very near future and is based on real-time web-search data. (Knudsen, 2020). Möller et al., (2020) present that controllers who are clarified to be 'management accountants' in their editorial, should actively play a role in addressing digital opportunities. In order to do this they should not focus solely on KPIs but also on objectives & key result systems which are known as flexible steering approaches (Möller et al., 2020).

An article written by Byrne & Pierce (2007) delineates the consequences, antecedents and characteristics of management accountants, this is in order to better understand their role in the firm. For instance they mention important aspects such as physical location not being an important antecedent for management accountants which diverges from previous research, and it also shows that the introduction of ERP had consumed more of the management accountants time rather than less. The characteristics control and technical aspects were considered to be important, operating managers (OM) had the view that MA could perform these aspects quite well.

The operating managers viewed management accountants to be more involved in making suggestions, recommendations and influencing outcomes rather than being decision makers. The consequences that are delineated in the article is that there is little interaction between the OM and MA, as they sometimes needed to convince managers that the involvement of management accountants means managers can achieve better results. Management accountants are broadening from their narrow bean counter role model to more of a business partner role. Appendix 1 explains essentially the characteristics of the management accountant and what the consequences can be, for instance less interaction between management accountants and operating managers leads to management accountants lacking business knowledge and having weaker control and performance.



## **2.7 Management accounting for new products development decisions & project planning.**

The case study from Nixon et al., (2011) clarifies the role of management accounting in new product design and development decisions (NPD&D). They performed a case study on a long and established automotive industry. The NPD&D process requires to set out BTB financial and non-financial targets for the new products that are being produced. Each phase such as the strategy and concept phase, approval phase or design phase has management accounting dimensions represented at each level (Nixon et al.,2011). The article also clarifies the objective of the firm, such as what customers are being targeted and what market distribution channels can be used during the market entry phase, in order to achieve their targets. The findings of their case study delineate that management accounting is involved before NPD&D projects have started with their strategic planning & product portfolio.

Management accounting has a correlation and contribution to the projects and to the management of the after-sales customer activities (Nixon et al.,2011, Frezatti et al.,2011). The case study presents management accounting being grounded into the strategy, structure and culture of the firm, since almost every department and employee in the firm has a financial perspective management accounting can aid to link all these perspectives (Nixon et al.,2011). Management control systems refers to information selection & presentation, selection is about the appropriate management accounting information whilst presentation refers to management control techniques such as planning/budgeting (Frezatti et al.,2011).

## **2.8 Management accounting & dynamic capabilities custom framework**

The different elements that have been seen to correlate between management accounting and dynamic capabilities as well as innovation has previously been seen through management control systems (Peters et al.,2019, Chenhall & Moers, 2015). Previous literature has delineated that transaction processing, reporting and decision support are some of the key elements a management accountant can focus on once digitalization incentives have been implemented, it could also be to bring forth new forms of KPIs (Knudsen, 2020).

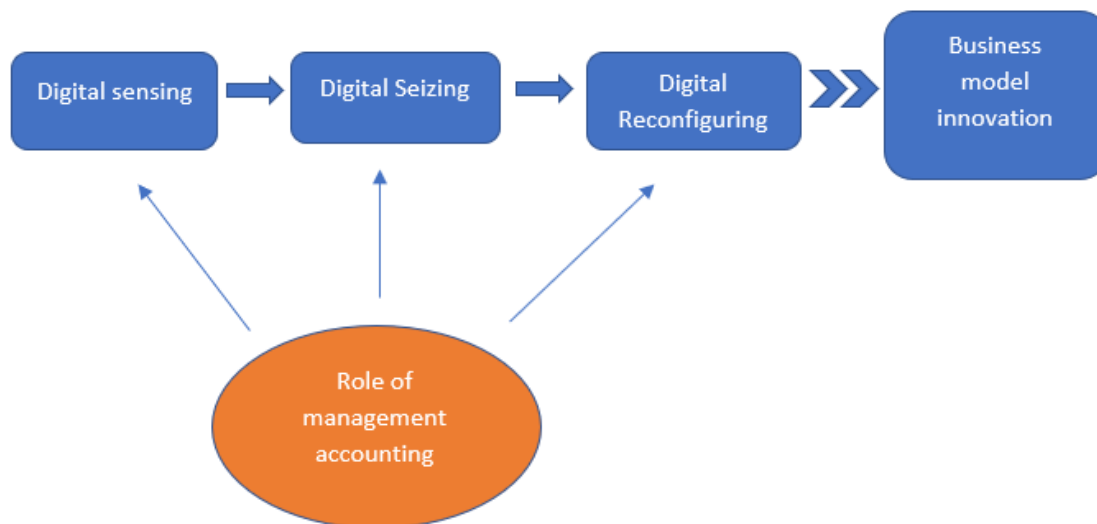
In terms of sensing, seizing and reconfiguring previous literature characterize important elements for dynamic capabilities such as being able to analyze the market. It could also be about probing markets, scanning, and exploring other areas of the business ecosystem (Feiler & Teece, 2014, Matarazzo et al., 2021). The way management accounting contributes with internal and external analysis can be explained by certain characteristics which a management accountant has, these are illustrated in terms of monitoring skills, organizational influence, business knowledge IT skills, ad hoc analysis, periodic performance reporting & administration as referred to in appendix 1 (Byrne & Pierce, 2007). Matarazzo et al., (2021) clarifies that their case study came to the conclusion of 'learning' being the second most important dynamic capability, this falls into the category of seizing as it is about using the current knowledge to act on new opportunities which were not as prominent before.

Management control systems (MCS) refers to the different methods on how strategic, performance and risk management is performed. IMA, (2008) mentions that the role of management accounting is shifting, it is more focused on implementation of strategy to help an organization succeed. In order to do this they work with management teams and contribute with strategic management. It is crucial to look at these systems in order to understand how they conduct things such as performance analysis, budgets, sales prognosis and more (Chenhall & Moers, 2015, Simons, 1995, Peters et al.,2019). Management accounting literature provides clarity to certain routines and structures which can be used in order to utilize firm resources, for instance through use of management control systems (Frezatti et al.,2011, Nixon et al.,2011, Coad & Cullen, 2006).

Measures are usually referred to different areas such as costs and revenues, income, or even something specific such as time and quality (Knudsen, 2020). They can be both formal and informal, the informal ones refers to specific measures such as the amount of customers coming in. As Parida et al., (2019) mentions in his article, these measures contribute towards creating an innovative digitalization process.

The objective of the firm is important in order to make a good decision as there needs to be a desirability assessed of choosing one action over the other, therefore the first stage from the firm should be to specify the firm's goal or organizational objective. The term objective could vary from profit maximization, to power base, security or removal of uncertainty, it could include the use of short term budgets & long term process planning in order to achieve objectives. It is argued however that the objective usually is for profit maximization (Drury, 2018). Literature such as Nixon et al.,(2011) has delineated that objective is useful in the initial stages of a new product development and should stay consistent throughout all stages in order to make the firm's strategic objectives into operational details.

Ex-ante & Ex-post are the specific timeline which will be analyzed, the article from Scapens (1990) makes it clear that a time restriction is required during a case study in order to see the development of management accounting over time. This is necessary in order to investigate the three different stages of dynamic capabilities. The initial sensing & seizing stage requires information about the process & procedures both before & during the implementation of the project which is ex-ante whilst reconfiguring is about the current state of the project, this is ex-post (Feiler & Teece, 2014, Warner & Wägner, 2019).



**Figure 2. Conceptual Framework for the Role of Management Accounting in a Dynamic Capabilities process.**

The figure above shows the area of research which will be in focus highlighted as orange. Management accounting is conducted both ex-ante and ex-post since management accounting techniques are implemented both in the sensing & seizing stage which is ex-ante & reconfiguring stage which is ex-post. The purpose is to look at the internal techniques & characteristics of ‘management accounting’ which previous literature has delineated towards being useful for a strategic approach towards a business model innovation. The techniques of management accounting this research will be focusing on are MCS, measures & objectives. The outcome which the chosen firm has managed to achieve is a successful BMI through the implementation of digital transformation. With the use of the model the study can identify the management accounting techniques & tools that the interviewed firm had used in throughout the dynamic capability process for digital transformation.

## **Methodology Chapter 3**

*This chapter will be discussing the different methods, factors & criteria's that are relevant in order to conduct this research. It will include choice of research, the knowledge criteria which is required in order to conduct this research, and the requirement that the digitalization project needs to fulfill. This chapter will also delineate the data collection process and general knowledge about flaws of the presented research type as well as other relevant information to consider when conducting this research.*

### **3.1 Qualitative research**

The article written by Bell & Bryman (2015) explains that the research methods are either qualitative or quantitative and that in some cases there can also be a mix between the two which is referred to in the article as an 'mixed research method'. For this study a qualitative approach is most beneficial as it will investigate the internal processes in detail in order to gain a more transparent view of the dynamic capabilities process, due to this a case study will be performed. Through the use of a qualitative research method the study can be more pedantic which allows for more detailed questions. A qualitative research study also allows more room for flexibility, and is able to provide a broader understanding of the questions that are being asked. The base questions can also be supplemented with follow up questions in order to make sure that excessive detail is provided which is important when conducting a case study. The chosen firm is within the shipping industry, this type of industry has shown to become more digitalized in recent times (Bavassano et al., 2020). This specific firm which was chosen for the case study has gone through a digital transformation which has provided them a competitive advantage in the market, the respondents that were interviewed are involved in certain processes of the digitalization projects which lead to the firm's digital transformation.

The negative aspect of a qualitative case study as Bell & Bryman (2015) highlights is that there is a risk of the study being subjective or impressionistic since it is dependent on how the researcher views things. In hopes to mitigate these risks, the questions will be open-ended and not leading in any sense. In order to make sure that the information which will be received from the conducted interviews are relevant the interviewed individuals will have been contacted in advance and have been provided with a quick summary of the information and different stages that need to be answered. The criteria's & information which has been sent to the interviewees can be found in [3.2](#) & [3.2.1](#).

#### **3.1.1 Exploratory Case study**

A qualitative case study has been conducted and followed up with a transcription of the information that had been gathered. In order to conduct this case study, questions relevant to understanding the role of management accounting in the dynamic capabilities process were asked. The questions are open ended and not leading, they can be found in Appendix 2. The benefits of a case study as delineated by Scapens (1990) is that it allows for a more aggregated unit of analysis, it allows us to better understand management accounting practices in terms of

procedures, systems, techniques and how they are implemented or used. The article proposes different types of case studies, this research will lean more towards an '*exploratory case study*' as this allows the study to explore reasons behind certain accounting practices which are being used (Scapens, 1990). This in result will be able to provide more of a generalization behind the reasoning as to why these practices contribute towards digitalization.

### **3.2 Criterias to conduct the case study: Management accounting**

In order to gain a perspicuous understanding of the entire digitalization process an explanation was provided to the firm in advance regarding what management accounting is and how in theory it is able to contribute to the strategic improvement of the firm. The firm chosen for this case study does not have '*management accountants*' as a role specifically, instead the firm has a digitalization team which work with tasks that requires them to create, implement or improve a digitalization project. The tasks which the digitalization team works with have shown to require management accounting techniques & characteristics. The criteria's that need to be fulfilled in order to properly analyze the 'management accounting' tasks is that the individuals I am interviewing have knowledge about the MCS, measures, objective & the time period (Ex-ante & Ex post) as gathered from the theoretical section.

*MCS*, is needed in order to understand how management accounting contributes with strategic decisions and risk management evaluations. *Measures* refers to costs, revenues, and incomes, the measurements can be financial or non-financial. It could be specific customized measures as well, an example of this would be customer satisfaction or quality & time. This is required in order to gain more of a perspicuous understanding of their focus and how they measure progress and the goals they've managed to set for themselves. *Objective* refers to the incentive the firm has behind the creation of the project, it could vary from being about security or removal of uncertainty or profit maximization which is very common. It includes the usage of budgets & planning in order to be achieved.

*Ex ante* or 'time' as a variable for analysis is important for the research as this allows us to understand how the digitalization project was conducted from the very start. In order to properly understand the 'sensing' stage, information regarding the idea and inspiration behind the chosen projects and how it came about is necessary. Due to this, it is a requirement that the individuals have knowledge or are able to retrieve information to the extent that they can trace back to the very beginning of the project. One of the projects traces back to 30 years ago whilst the other one began 2 years ago. *Ex post* is also analyzed as the case study will be viewing the actions taken today in order to continuously improve the chosen digitalization projects.

#### **3.2.1 Criteria's to conduct the case study: Digitalization project & Dynamic capabilities**

In order for the digitalization projects to be worth investigating, it needs to meet the requirements of the resource based view (RBV) so that the case study can be conducted, essentially the projects have to provide a competitive advantage. Since the study's aim is to

understand the role of management accounting through a dynamic capabilities perspective, it is essential that the fundamentals of RBV perspectives are met. As explained in the article by Eisenhardt & Martin (2000) the RBV framework at its core is about having a perspicuous understanding of how competitive advantage is maintained for a longer period of time. Dynamic capabilities is about manipulating the resources which exist in order for it to create value, hence the project has to be in purpose of creating value and a competitive edge to the firm in the market rather than being a project which facilitates certain processes and provides no real competitive advantage. The concept of dynamic capabilities was explicated to the firm in advance, and has been explained through the terms of, sensing, seizing & reconfiguring. Two digitalization projects will be investigated, however they are both part of one bigger picture, this increases the opportunities to trace the systematic deployment of the management accounting processes in the organization. The digitalization projects which will be investigated, were able to fulfill the requirement of the RBV.

### **3.3 Data Collection**

In order to conduct this study 5 specific individuals in the firm were chosen that are knowledgeable within digitalization and are aware of the management accounting tasks within the firm in correlation to the digitalization projects. These individuals were chosen as they covered the basis of the information required to conduct this case study, the European Regional Officer (ERO) is in charge of digital transformation & and has a lot of insight to the reconfiguring process, the eCommerce manager has insight towards the customer & commercial relations of the projects which are used in the sensing stages. The eCommerce manager was also able to provide much needed insight to the seizing stage for both projects. The eCommerce supervisor works with API related projects and the IT senior manager works with the development of EDI. The financial control manager has an overview of the firms projects, revenues and profitability related to the projects. A total of 6 interviews were conducted as seen on table 1 in section [3.7](#) moreover the financial control manager was contacted through email. These 6 interviews gave adequate amount of information in order to conduct the case study. To facilitate the interviewing process, an email was sent to the interviewed individuals in advance which provided them a summary regarding what information this case study requires. This provides the interviewees a better understanding of what the questions will look like and what the purpose of the research is.

For instance the term ‘management accounting’ & ‘dynamic capabilities’ was not a concept they were too familiar with and due to this an email was sent to the interviewees with a quick summary behind the concept of ‘management accounting’ & ‘dynamic capabilities’ as categorized from the ‘criteria’s’ in [3.2](#) and the three different stages of dynamic capabilities as categorized from [3.2.1](#). Aside from the questions used in appendix 2, there were follow up questions used throughout the interview as well which are not included in the appendix, since they were simply a means to receive more nuance to the questions being asked.

The summary provided had ameliorated the interviewing process and made it smoother. Due to the summary the interviewees in question are able to build their own perception of dynamic

capabilities and management accounting, this mitigates the risk of the study being impressionistic. The data was collected through interviews conducted with different individuals in the digitalization team. Due to the size of this firm, the roles are split into different departments and each department that is involved in this digitalization project was involved in the interviewing process. The interviews had an average duration of anywhere between 30 minutes to 1 hour as specified in the table of [3.7](#). All of these interviews were recorded and transcribed at a later date.

Moreover, aside from the interviews, data was also collected from documents and PowerPoints which have been provided by the firm in order to facilitate information gathering. These Documents and PowerPoints provide insight about the chosen digitalization projects and what actions the firm take towards a digital transformation. These documents & PowerPoints contain certain sensitive information, therefore only relevant information from these documents that contribute to the case study has been presented and used towards the empirical section of this study.

Emails containing questions were also sent to 2 different respondents, those respondents were the Senior IT Manager, Head of B2B EDI and the Financial Control Manager. The email sent to the Senior IT Manager was used to ‘follow up’ with further questions from the interview that was conducted, and the other email was sent to the Financial Control Manager who was not able to set up a time for an interview. Their answers to the emails will be used in the empirical section of this study.

### **3.4 Credibility and reliability of this research**

In order to promote a higher sense of credibility which refers to the truthfulness and reassurance of the primary & secondary which has been collected, certain procedures have been performed in order to enhance the case studies validity. Transcriptions have been performed of the interview recordings that have been conducted, these transcriptions have then been presented in one final interview in order to verify the credibility of the information which has been collected or if something may be missing. This process is referred to as ‘respondent validation’ (Merriam, 1998). Another procedure to which promotes the credibility of the research is the triangulation method as recommended by Bell & Bryman (2015), the triangulation method is to consult other sources of data. This was applied in the case study by asking similar questions to the different respondents in order to see how the different respondents would answer, this also ensures the trustworthiness of information collected from the firms coworkers. As clarified in [3.1](#) Bell & Bryman (2015) have clarified, there is a risk of the study being subjective or impressionistic as it is based on how the researcher views things. By making the questions open ended & not leading the likelihood of these risks can be mitigated, which increases the reliability of this research.

### **3.5 Issues and limitations of this study**

The limitations procured from a case study is that it becomes a small case example as mentioned in the article from Scapens (1990). The study is based on one firm type which limits the

conclusion that can be derived from this study, as the outcome may differ if the same study is conducted on a firm within a different industry. In order to gain a more accurate representation in regards to the role of management accounting from a dynamic capabilities perspective, a larger sample size is required. Another limitation of a case study is the case of social reality, essentially there can't be a case study which is 'objective' since this case study can't be independent from human beings and simply only be observed (such as a natural phenomenon). Due to this researcher bias becomes more of a prominent issue (Scapens, 1990). Confidentiality is also an issue which arises with a case study due to the sensitive nature of a case study (Scapens, 1990). Due to this any names will be excluded from the research in order to boost confidentiality between the author and chosen firm.

### 3.6 About the firm

For confidentiality reasons the chosen firm name will be kept anonymous as well as the names of the people who are being interviewed. Roles of the interviewed individuals have been included. The firm is one of the largest shipping firms on a global scale and has over 100 000 employees in the firm with an accumulation of over 40 years of experience within the shipping industry. A shipping firm was chosen since digitalization trends have arrived fairly late within shipping as an industry, the industry has shown signs of being conservative in digitalization in comparison to other industries such as automotive or aviation (Arduino et al.,2013). The shipping industry has in more recent times shown interest to become more digitalized as delineated in the article by Bavassano et al.,(2020). Due to this it is interesting to investigate how the shipping industry is adapting towards a digital transformation and the process towards implementing it. This specific firm has a strong position in the market and the project was able to fulfill the criteria for RBV & can be analyzed through the dynamic capabilities framework.

### 3.7 Table of interviewed individuals

<b>Respondent title</b>	<b>European regional officer (ERO), Project &amp; Business process expert for Digital Transformation</b>	<b>eCommerce Manager, Digital Agency</b>	<b>Senior IT Manager &amp; Head of B2B EDI</b>	<b>eCommerce Supervisor, API Solutions Development Executive</b>
<b>Number of Interviews</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>
<b>Duration of interviews</b>	<b>45 Minutes &amp; 30 Minutes</b>	<b>75 minutes &amp; 35 minutes</b>	<b>35 minutes</b>	<b>30 minutes</b>

**Table 1. Table of interviewed individuals**



## 4.0 Empirical Findings

*This chapter will be delineating the results of the interviews conducted in this case study; multiple interviews were required in order to gain an accurate understanding behind the entire image of API & EDI as a digitalization project. Moreover, documents and PowerPoints were also provided in order to contribute towards this research, they aim to explain the firm's current processes, communication & visualization strategy and also what their future strategy is for EDI/API.*

### 4.1 EDI & API

An interview with the eCommerce Supervisor clarified that EDI (Electronic data interchange) has been around for a long period of time, for 30 years, whilst API (Application programming interface) is fairly new and developed, and has only been around for 2 years. API is considered to be a new technology especially for shipping and logistics, banks have however been using them for a fair amount of time. API in comparison to EDI is quicker to implement and is more developed due to how the web has evolved throughout the years, API is also in real time whilst EDI is not. API also has the advantage of being available to any customer whilst EDI can't be implemented by everyone, EDI has the advantage of being able to cover high volume exchanges whilst API can usually only cover moderate volume exchanges. In the current state of the market, EDI is still a very important service provided to partners & vendors, API however is considered to be more innovative and therefore the firm only promotes API towards customers since they've started implementing it.

For this firm specifically, EDI is free of charge and can be used by both customers and partners. API however, is subscription based and is also offered to both the customers and partners.

#### 4.1.1 Advantages behind EDI & API

As mentioned by the eCommerce manager, the major advantages behind API & EDI is that it requires less people in order to perform tasks, due to this the firm is able to reduce their costs.

*If we as a firm do less phone calls, less emails, we need less people and you can allocate those resources to other departments or projects. This industrializes the process as well.*

EDI standardizes electronic formats so that computers could process information, this greatly reduces the need for manual labor. It is also one of the safest methods to transfer data, these systems aid shipping firms massively as it increases the supply chain effectiveness and profit. Since documents are now digitalized, human error risks become mitigated as well. EDI provides partners & customers greater control of their transactions, increases communication and improves trade in a cost-efficient way. With EDI business partners can collaborate and exchange information from different parts of the world which improves efficiency and speeds up the business cycle. API is able to transfer supply chain data and also automatically add pickup requests into a carrier system, this massively increases efficiency for both the firm and their customers.

### **4.1.2 Products that are offered today for API.**

The eCommerce supervisor delineated the different products offered by API. The essential package provides customers, tracking, shipments, copy of BL shipments, contract, schedule, D&D which is storage information. However the essential package from API means that the customer has to request for this data manually as the package is included in the 'GET' method. This can however be upgraded to a 'PUSH' method which is proactive since we manually provide information to the customer without them asking for it. They also offer a visibility package which allows them to share information of any event regarding containers, for instance if they are loaded onboard, discharged or if it has arrived. This increases transparency to the customers as they can see the entire history behind how their order is being handled in real time. These products contribute towards making the supply chain more effective and efficient.

### **4.1.3 How EDI works**

The PowerPoints provided by the firm gave information regarding how EDI works as a system and the different steps for it, there are 2 major steps, inbound & outbound. The differences between GET & PUSH has been described in [4.2.2](#). The inbound stage consists of: Retrieving EDI files from the partner server in order to through GET method or they can drop it the firms servers (PUSH method), after that the firms can identify the files and determine which transformation to apply by inserting the data in transient tables, the inbound stage is now integrated into the core tables and can be validated by the business user to fix data issues. The outbound stage checks if the partners have a profile in the firms system, in order to trigger data automatically from the business event or manually from screen. Data can then be placed into transient tables, and then collected in order to determine the process to apply. Lastly the data will now be mapped to the partners format and can be delivered to the partners server.

## **4.2 Sensing**

The development behind the API from EDI has been made possible through an environmental scanning. By viewing what the competitors offer in order to not miss out and to stay relevant within the market. When asked about what management accounting systems contributed most with the environmental scanning they mentioned that benchmarking & road maps are performed. When performing benchmarks the firm looked at the internet of things, robots or any other disruptive or non-disruptive digital technology which the competitors are using. Through this the firm was able to identify the opportunities that exist in the industry, the firm also maintained contact with their partners in order to see what the partners offered. Road maps have been one of the most important steps for identifying opportunities and have been used throughout the dynamic capabilities process of sensing, seizing & reconfiguring. The important financial targets and measurements the firm has to focus on are revenues and number of customers which can be converted over to API & EDI. The financial control manager of the firm, has clarified that API & EDI as a digitalization project is very important for the firm's financial performance as well as customer satisfaction.

Due to this as mentioned by the eCommerce manager, the financial performance measurements such as a profitability analysis have always been important, this also determined how much of a budget the board of the firm was willing to provide to the digitalization team that focuses on API & EDI. Moreover measurements such as number of customers converted, revenue & profit were used in order to forecast the development of API. These are the targets that the digitalization team had to focus on initially but are also used today in combination with other measurements.

*API has been known for quite some time now within the market and once customers started requesting it and we saw that there is a big demand for this, our digitalization team started planning how it should be incorporated into the business.*

An overview of the sensing, seizing and reconfiguring stage was made more coherent through an interview with the eCommerce manager. In order to improve the product services which API & EDI provides, benchmarking has been performed in order to see the current prices of what other companies use for their API products, it also provides an understanding of the different services. KPIs are specifically being used in order to measure improvements both for API & EDI.

API is a subscription based model which has been incorporated into their business model. These digitalization services need to be aligned with what the customers expect, what are some of the benefits for using API? These are important questions to consider in order to further adapt & develop the business. The reason benchmarking has been useful for external analysis in order to identify the need for API is because they can measure themselves towards external standards. It allows the firm to strategically adopt towards the standards of what other firms have been using, it can also contribute towards customer satisfaction, the road map complements the benchmarking strategy as well since both methods aid with the visualization of their future desire. The IT senior manager made it apparent that API came through the means of following along with a disruptive technology. In order to adapt to the market, it is important to view what the partners are doing and how the market is adapting.

Legal issues or geographical location & size of a firm are also another aspect to tackle, a medium or small scale region or country might not have the automation required for EDI, and for those regions, API is a better option in terms of technological capabilities, this data was also gathered during the sensing stage. Moreover during the initial sensing stage, a former-employee had contacted a lot of the current customers at the time in order to view the demand for API services and if the customers would be willing to pay for it, because of this, more data was gathered in order to see if this project was worth pursuing. The data gathered allows for more than just forecasting, it also allows the firm to do budgeted targets & profitability analysis once the demand is made apparent as well as the investments & costs that would be required in order to pursue API, this data can then be summarized into reports. The firm then conducts a variance analysis in order to see how the predicted results or budgeted targets differ from the actual results, this is however performed in the reconfiguring stage. The 'product owner' team is the one which does an environmental scanning process in order to view what products of API exist in the markets and their price.

EDI followed a similar procedure to API, the firm mainly focused on two criteria's in order to pursue the automatization which EDI brings, the two criteria's were: the capability of the partner in terms of technology, and volume. The analysis of the market made the firm realize there was a huge demand for EDI volume wise and that it also led to an increased efficiency as well as cost reduction. This cost reduction became apparent to the firm once a profitability analysis was performed in order to make the benefits of automation more transparent. Another aspect was to view if their partners were able to utilize the system with them in order to maximize its benefits. Road maps has aided the firm to better understand how EDI can be incorporated into their business model and how EDI can bring value to the firm and the profitability which can be derived from it. The European Regional Officer (ERO) clarified that in contrast to the sensing stage, today, most countries in Europe are able to implement EDI, with the expectation of countries such as Azerbaijan or Armenia, and for those areas API or manual bookings are more suitable, but when EDI was new then the technology capability was even more limited. It was due to tools such as KPIs & constant communication with partners they could measure their progress towards partners and also identify their partners technological capabilities. Benchmarking has not been used for EDI during the sensing, it was used for API.

### **4.3 Seizing**

The seizing & reconfiguring stage can be connected to a few different stages. The firm has a road map of the products that are available in API & EDI for the customers, in order to develop the road map the firm looks at the demand that a customer may have regarding a certain product which they think might be useful to them. As mentioned prior by the eCommerce manager, there is a product team which is known as the 'product owner' this team specifically looks at what API & EDI products already exist on the market, what has existed and what we have to offer, in order to stay updated regarding how the market is moving, they contribute with a market analysis. Since both this team and the digitalization team have worked so long with API & EDI in shipping specifically they've managed to build up certain knowledge about the market regarding what is necessary for the shipping industry.

This has contributed to their product knowledge. This product knowledge is used when creating road maps in order to strategically be able to implement API into the firm. As mentioned prior by the senior IT manager, when EDI first came about it was important to view the capability of the partners in terms of technology, this relates towards the 'seizing' stage. If their partners were not able to implement EDI due to their technology at the time, then the firm would have not been able to have been able to develop the software and other methods to implement EDI. The product knowledge that the teams have, due to their experience within the shipping industry, is able to dictate what corrective actions should be taken in order to strategically implement it. The road maps for instance include certain steps regarding how API will be communicated across the firm, in the case of API, there are meetings held with the regional officers presenting the financial & non-financial data, the benefits of using API over EDI, what it will be able to offer & how they plan on advancing it further.

API as made perspicuous earlier was incorporated into the business since there was a demand for API products from customers, as this was a service which was not offered prior and it was also considered to be a disruptive technology which similar firms in the market was using. This was then pitched towards the committee who aligned stakeholders towards proceeding with this new project by increasing the budget. In order to pitch the idea to the committee the variance & profitability analysis as well as the demand & forecast was presented which was gathered during the sensing stage. Once a market analysis was conducted it became evident that there was a clear demand for API, the firm then decided to increase the budget in order to develop API products which customers demanded. This project has been successful as EDI is no longer pitched towards customers, API is now marketed more towards the firm's customers. Contrary to EDI, API places less technological requirements from their partners. The steps that the firm took in order to create their first API products in the 'seizing' stage follows a similar procedure regarding what they follow today in order to improve it, this is also known as the '*reconfiguring stage*'.

#### **4.4 Reconfiguring**

In order to continuously adapt & develop API the process can be broken into 3 main steps: *Product analysis, Market & Customer analysis, IT feasibility & complexity*. The first step comes from the product owner team, this is because they have the most product knowledge and what they essentially do is, align the road map with the new product the firm would want to introduce. As mentioned prior the team specializes in having an overview of what EDI/API products exist & what there is to offer. This team provides them an overview of which product can be delivered and what is prioritized. The second step towards expansion comes through an analysis of the market from the 'commercial' perspective. The eCommerce manager and his team behind him has the most knowledge within this area as they are constantly in contact with customers, due to this they are able to analyze what a customer may request.

As mentioned prior in the sensing stage, the eCommerce manager mentioned that before the creation of API there was an employee who contributed heavily with a market analysis by contacting customers in order to see their interest level for services that API can provide and if they would be willing to pay for it. A similar analysis is performed today in order to provide them with accurate feedback from the market & customers, this also mitigates risks of creating a product which customers would not be too interested in. The third step is about the IT feasibility & complexity. The firm asks themselves, in order to develop this 'new' digital product does the firm really have the software requirement? Sometimes the software or system is not up to date or the technology is not made possible which means that you will not be able to deliver the new intended product. There are many other projects that the firm works with which may take prioritization over a new API product.

When asked about their market analysis strategy, a lot of it has to do with general knowledge of what a customer could want and need, this is because the firm knows what is popular when it comes to EDI & API products, when the firm meets with customers they are able to present what exists in the system and what the firm is able to provide. When a new type of product is requested, the firm can then prioritize it. Using the road map the firm can prioritize certain

products over other ones. The road map allows the firm to see what new type of product is possible to be made and delivered. Profitability analysis & forecasting is also useful in order to gain more concrete structure, this procedure also aids the firm with their risk assessments.

*The intention is to deliver a new product on each quarter of the year, so once a new product has been decided it will be placed between the period Q1-Q4 the products that are placed in Q4 will be prioritized last, this is because the software or technology is not up to date in order to develop these products. The projects placed in Q4 will be long term investment products which can't be provided as of right now, whilst the Q1 products will be prioritized first since they are possible to deliver.*

The management accounting tools which were mentioned throughout the interview were certain measurements such as a profitability analysis, customer satisfaction, as these contribute towards the product development, benchmarking matrix, roadmaps, budget & investments have also shown to be important. The eCommerce manager delineates that when focusing on delivering a new product on API the firm has to pinpoint exactly where they need to start and follow up from there, this is because there might be different issues which need to be addressed. For instance, on the product side when the firm wants to have a certain product delivered, the firm studies the market and the product possibility with IT.

Profitability analysis is a part of this investigation, since if a certain product is being requested and is in demand, the product will have a lucrative outcome, this is important in order to keep the firm's finances in check. Institutional barriers & legal issues are one of the challenges which the firm might face when creating a new product for API. Since this firm is global and ships almost worldwide, they interact with customers from many different countries. One of the core advantages behind API & EDI is to provide data, and to facilitate information sharing, however this data can be very sensitive.

The eCommerce manager mentions that it's important to analyze if issues will arrive by providing certain data to a marketplace, an example would be 'pricing in quotation', before this information is made public to the marketplace or to the customer there is a long-term investigation regarding the risks and legal issues. When creating a new road map product, the process to build one is difficult because API products need to be presented in different regions, which means that the commercial team needs to learn and train new individuals within the new regions. A benchmarking matrix would facilitate this process and it's something they are currently working on.

Budget is very important as it is for all departments. In order to continuously improve the software and create new API & EDI products, the head office needs to increase our budget. The digitalization team has a target which they need to reach in terms of revenue, this is known as the commercial target, hence why a profitability analysis contributes towards how much of a budget and investment the team will receive. Calculations are performed in order to see how many new API customers will be needed to reach our target, and how many people are needed in order to create new API products to attract more customers. In order to determine this commercial target they internally perform an analysis to see how the firm could reach 1 million

dollars in revenue from API, in order to do this evaluation they ask themselves how many API customers would be needed? What is the average amount of API services used by customers? What is the support required to keep these APIs up to date? Through risk assessment and cost calculations by taking into budget, profitability, revenue, customer satisfaction and API contracts increased each year they can set up a reasonable commercial target.

The more lucrative API is to the firm the higher the likelihood is to get an increase in budget from the committee, the eCommerce manager then proceeds to mention that his manager talks with a committee higher up where they do a 'budget exercise'. In this committee they are given the opportunity to present new products and what the team currently is doing and justify why a budget increase would be necessary. The budget is assessed at the end of the year in order to be able to decide what the target should be for next year and if the budget is enough for that target. As clarified by the European regional officer (ERO) who is also the 'Project & Business process expert for Digital Transformation', the firm has global financial targets for API in terms of how much revenue they want to generate, this then transfers to regional and country. There is however a slight disconnect because it is difficult to go to certain countries and want to generate 'x' amount of revenue, due to this the firm has changed the targets of these countries to nr of customers, nr of customer needs, nr of customer meetings & nr of customers that sign up for API instead.

For EDI the firm reached out to all the countries in Europe in order to effectively understand what EDI projects they would have for 2022, and the firm created a budget & forecast of the demand. The firm had a substantial backlog as well at this point, this then enabled the firm to reach out and look at the resources that the firm had and determine the future. The budget was created by looking at the demand, the backlog and future demand. New people were then hired in order to work with these projects, this clarified to the firm the importance of 'budget & project planning' because normally there are projects in the system which different regions/countries work on but they're not looking around what potential other projects could come in. User acceptance testing (UAT) is another area they are measuring because it involves partners, the reason as to why this is being prioritized is due to the fact that the firm was historically slow at doing EDI, which meant that partners would move to other projects by the time the firm got to their projects. This is now performed twice as fast as before since they've managed to measure the progress using KPIs and key factors. UAT is done in conjunction with system integration testing (SIT). This is to see that the system talks with each other, when it goes through that the firm can send the test files to the vendor to make sure that it's readable and contains the right content. It is essentially prototyping before the project is finished and delivered to the partner.

The ERO clarifies that road maps are important for the development of both EDI & API, the reason as to why it has been used is due to the fact that the roadmaps have allowed the firm to better visualize their goal and see the gaps that need to be improved. It allowed the firm to have a better visualization of the market in terms of what products are available and also where resources can be allocated.

*'By building a road map you can identify how to move forward, the timing of it which is obviously critical and the phases to get to the final objective, the next part is to communicate to different countries and regions on what the road map is'*

This improves efficiency and visually aids stakeholders & different teams in the firm towards understanding the more complex issues so that communication is improved internally through the help of increased transparency. It aids the IT department who are working towards developing and programming new EDI/API products that can be offered to customers, the roadmap allows the firm to have a better visualization of ETA for new products as well & how the IT infrastructure can be further improved to facilitate the creation of new products. An example of a road map provided by the ERO was that there is a road map which monitors the frequency of EDI, if the firm stops sending EDI messages to the vendor the system will check performance every 2 hours and it alerts if the firm does not send any message out. This monitoring alert is implemented into 'dynotrace'. This function is a rollout to terminals & partners across the world & there is a road map in terms of how this approach works, so what will be done this month and what will be done next month, and this has been really useful to have in order to communicate out the regions/countries to show them what is coming & when it's coming.

The senior IT management & Head of B2B/EDI clarified that the major management accounting systems and measurements which are used in order to communicate EDI throughout the whole business and constantly improve it are; KPIs, scorecard, budget planning & road maps. There is also an auditing team, not a 'financial' one, they are more of an EDI system stability auditing team which make recommendations for EDI improvements.

KPIs and scorecards are communicated to all of the general managers of Europe through a meeting in order to be able to reach the desired target. When asked about the meeting, The IT senior manager mentioned that one of the main objectives of the scorecards is '*quality of service to measure an inquiry*' this way the firm can set up 'the desire' and 'where we are today'. 'Where we are today' is accumulated from data points that have been collected whilst 'the desire' are the targets in order to increase sustainability and improve EDI. Due to this an 'efficio-program' has been developed in order to increase efficiency and improve the business, around 8 different key indicators have been made for EDI so that it may be improved.

That's where the KPIs have been defined so that the firm can see where they are today and what the projected target is, in order for the firm to meet the desire. These KPIs represent essential factors for EDI such as the availability of it, or the success/failure rate of the EDI system which then allows the firm to evaluate if they are satisfied with the current ratio, if not then they need to take actions towards improving it. These are some of the scorecards which are presented to Europe's general managers so that the steps towards improving EDI are made more perspicuous. When asked why KPIs are used instead of other management accounting tools the 'Senior IT Manager & Head of B2B' mentioned that it's for a very simple reason and that's because;



*KPIs help us tackle where a lot of our issues come from. When an analysis is performed, the firm goes over the issues of EDI through the lens of a 'user perspective' and that's how we are able to identify most of the current issues, these identified issues are considered a criticality in order to run the business.*

The firm therefore places these issues into KPIs so that they can measure and improve on them. Other management accounting tools would not be as effective as KPIs and scorecards have been, another reason behind not using any other financial instruments is because they've not been needed. The benefits of EDI comes from intangibility, and the team has never had any issues with receiving the budget that they need, therefore benchmarking has not been required in the past. Whatever they've asked for has been given in the past due to the fact that the more transactions that they can automate, the less amount of human errors could occur.

When asked for a further explanation regarding how the budgeting process works the Senior IT manager delineated that the firm analyzes the past 2 years of the work that has been done on EDI. The team checks through both the input and new demand via EDI, a calculation needs to be made to see what the current costs would be to meet the new demands whilst also accounting for the current costs they possess. This is then added into the budget request depending on what the team anticipates the demand will look like in the coming months.

The reconfiguring stage for EDI today in order to improve it consists of using a tool which measures the demand and all previous record inputs, the inputs can be factors such as who our partners are that are requesting a certain EDI service? What technology is required in order to better connect our EDI system with our partners? There is a workflow system which goes from the demand of the product to the delivery after the details above have been given, these requests are then prioritized after a business process has been performed in order to validate the need for this new demand. After the demand has been pushed to the IT team, an estimated time of arrival (ETA) can then be provided regarding when this new demand can be featured.

Moreover, the senior IT manager mentions that the EDI team focuses on proactiveness, anticipate, adopt and improve. Anticipation refers to before or the moment an error occurs in the system, the IT department knows the errors of EDI before the business does. If the system resource is at a critical threshold level the firm is now able to act on it faster, the senior IT manager mentioned that the firm has implemented monitoring into one of their industry tools which is called dynotrace. It keeps tracks of EDIs they already have active with partners, for instance if a certain partner sends out an EDI request every 2 hours and if there then happens to be a period where no EDI request has been sent out, the dynotrace will pick up on it, this is a monitoring & alerting system which has recently been added to the firms EDI. The team at the IT department also possesses certain knowledge and habits in order to pinpoint exactly where the errors are in the system, and how to find them, this comes from experience within the field.

The idea behind implementing a monitoring & alerting system into 'dynotrace' in order to facilitate the risk assessment of EDI comes from an audit report.

*'There was an audit performed last year for the EDI system and several recommendations were made and those recommendations are implemented. Monitoring & alerting is one of the recommendations that was made, that is how we are able to keep improving and giving more and more value to the business.'*

When asked if more detail could be provided regarding how this audit report works, the IT senior manager clarified that it is not a financial audit report, it is more of an EDI system stability auditing report, they make suggestions and recommendations for EDI improvements. It is a team based on individuals from different teams, some of them are external but most of them belong to the IT team which already focus on developing EDI. The auditing team essentially gathers feedback from different departments that work with EDI such as the commercial, product owner & IT team, they then check & validate with their staff after reviewing the feedback and then come back with recommended improvements. These tasks are able to be performed due to the information which road maps and KPIs provide, as well as the measurements put in place to gain a perspicuous understanding of what EDI errors and problems are occurring.

The firms look at factors such as delivery quality and standard structures in order to see that it is consistent with the standard methods of EDI. The report contributes to the risk management assessment. There is an audit team in the ports of Barcelona as well, however they are completely external and contribute to small recommendations of EDI through auditing in order to create a stronger partnership with the firm. The IT senior manager emphasizes that at the end of the day the main objective for EDI is firstly to make sure that it is available all the time and secondly that the firm should not miss out on errors that require tickets, reprocessing & reengaging. The firm does not create any new products for EDI anymore as most of them have been developed at this point, the focus has now shifted towards API instead for new products.

EDI provides value to the business model in the sense that EDI is one of the top 10 applications which the firm is able to offer. In order to remain in the top 10, it's important that you define the availability of EDI since EDI now brings a lot of value to the firm and is also able to handle a lot of volumes. The value which is created is focused on intangibility factors and not tangible ones, as previously delineated, EDI & API provides value to the firm in terms of improving the supply chain efficiency. The IT senior manager stresses that if EDI is not functioning properly, then a lot of issues are caused for the firm. As an example, there was an incident in April 2022 where EDI was not functioning properly, and a lot of shouting and screams came across the globe. The firm realizes the importance which EDI brings to the business structure and due to this it's important to make sure that EDI is available and error free. There are no new products developed for EDI since most of them have already been made, the focus has now been shifted towards API instead. Moreover, the documents and PowerPoints that were provided in order to aid further with this study makes it clear that the key figures which the firm has portrayed are about the EDI delivery and volume in order to measure the cash flow on a monthly basis.

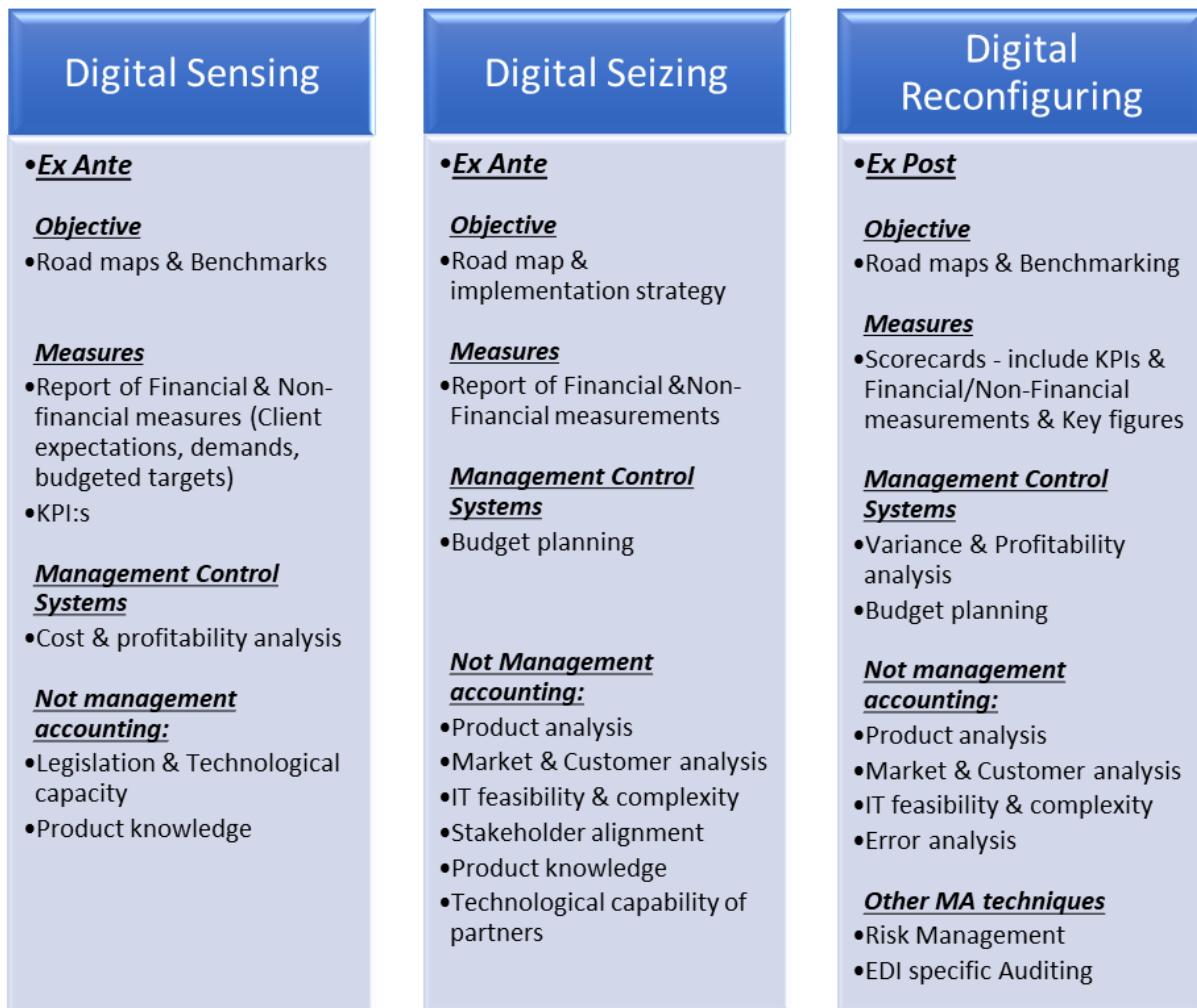
The way that the scorecards function as clarified by the ERO is that they measure the different activities that they have and their success rate towards these activities, the scorecards include targets related specifically to EDI & API. Once an activity is chosen then there is a description

of exactly what is going to be measured through the use of KPIs, it is also weighted in order to see how important the target is. This is also known as the coefficient, they have a target for the end of the year and target for the first 4 months of a new year. They measure performance & achievements, this is also ranked in order to see how they are performing, every region uses scorecards with KPIs as a measurement, and this is then compared on a global basis in order to see where to allocate resources and take corrective action in order to continue bringing value to the firm. It is not only financial measurements but also internal business processes & customer satisfaction. The performance & achievement data is summarized with a scorecard report, this data is useful in order to make smarter decisions for their budget planning.

The recurring trend which was made clear throughout the interviews with all of the respondents was that they all have certain knowledge regarding shipping & digitalization, they know what works, what will be in demand, what to focus on and what techniques to use. Whenever the respondents were questioned, *why has 'this' management control system, technique or measurement been used over others?* The answer would always include a justification regarding how it works for their firm and the reasoning behind not trying any other technique or system is because they individuals in the teams for EDI & API are experienced enough to know what works and what does not.

The new objective of the firm for both EDI & API is to be able to investigate & capture the current processes, support & issues which are encountered by all parties that are involved whenever the firm is onboarding customers & vendors to EDI. The outcome of this will be that the firm can identify and implement potential process improvements, organizational changes, training & documentation so that the process can be more efficient, streamlined and visible. The documents & PowerPoints portray that for the future, EDI capabilities need to be educated to different countries, the shift has to move towards interfaces in order to achieve digitalization benefits. The firm is also planning on tackling inefficiencies, this included old EDI setups, reviewing the errors such as frequency & determining opportunities for improving data integrity as well as accuracy. These documents make it apparent that visualization and measurements as well as roadmaps are key factors in order to communicate the firm's business goal to all the departments and stakeholders.

The empirical findings from the firm are concluded in the table below, the table aims to provide a brief summary of the management accounting techniques and characteristics placed into the 3 different stages of the dynamic capabilities process. It is categorized into the different criteria's of management accounting which have been investigated through this case study, the criteria's are: Management Control Systems, Objective & Measurements, the time interval of which the different stages belong to are categorized with Ex-Ante & Ex-Post. For the reconfiguring stage there is a criteria of 'Other MA techniques' and this refers to management accounting techniques which were used but can't be categorized into the criteria's the case study has evaluated. 'Not Management Accounting' has also been added as these were steps which are equally as important if not more important than the management accounting techniques & tools used throughout the dynamic capabilities process.



**Figure 3. Summary of Management accounting & ‘Not Management accounting’ techniques categorized into the dynamic capabilities process.**

## **5.0 Discussion & Analysis**

*This chapter will focus on presenting the empirical findings and analyze them in relation to the theoretical framework which is found in the second chapter of this study. The analysis will be to present the management accounting techniques and how the dynamic capabilities process has been for the firm in order to compare it with what has been discussed in the theoretical framework. The aggravated terms from Figure 3 will also be compared throughout the different stages in order to see the similarities, differences and development of the firm. The analysis aims to make a research contribution evident by answering the research question of this study, how may management accounting contribute to dynamic capabilities for digital transformation?*

The case study is concerned with answering the question of what the role of management accounting has had for effect on the three different stages of a dynamic capabilities process in order to see how the firm has innovated their business model through a digital transformation. This is conceptualized in Figure 2. However Figure 3 provides a brief overview of the management accounting techniques & characteristics which the firm has used in order to strategically & create and implement EDI & API to the firm.

### **5.1 Role of Management accounting in sensing stage**

The literature review delineates that the sensing stage is about assessing digitalization trends and technological opportunities in relation to the needs of the customers. It's also probing, listening to the customers & suppliers in order to be able to create new product & service opportunities, this provides insight towards a customer's motivation which is important to understand for digital transformation (Matarazzo et al., 2011, Feiler & Teece, 2014). Listening to the customers has been a very important step for the firm in order to sense and also see the opportunity to create both EDI & API. The firm made sure to keep an open communication both with their partners and customers in order to further develop the EDI & API concept and see the benefits of it. The empirical results have clarified that communication with their partners & customers has provided the biggest incentive to pursue these projects.

As seen in Figure 3 throughout the sensing stage, it has been made apparent that benchmarking & road maps have been critical in order to perform environmental scanning of what API products exist & how the firm can benchmark towards their prices. Benchmarking has helped the firm analyses the prices, internet of things, disruptive technology. This falls into the category of monitoring skills & business knowledge which are traits of management accounting (Byrne & Pierce, 2007). This also helps the firm define their objective through the use of management accounting tools to improve their visualization of the strategy (Nixon et al., 2011). Legislation & technological issues were also investigated as a part of the environmental scanning since API is according to the firm easier to implement and API services can be provided to certain countries/regions where firms don't have the technological capacity for EDI. Monitoring client expectations & demands was another factor which was important for

API specifically, since it was considered a disruptive technology at the time, there was a need to view the demand for API services. As mentioned throughout the interview, a former employee had gathered feedback from customers to view the demand for API services, prices they are willing to pay, and what they expect. This data is summarized into a report of both financial & non-financial measures as seen in Figure 3 which includes the budgeted value and an overview of the demands. Alongside this report, costing systems & profitability analysis are also conducted in the 'sensing stage', these are classic management accounting techniques used for global competition (Drury, 2018). The non-financial measurements are client expectations & demands which are gathered from the 'product knowledge stage'.

Routines such as this can be viewed in management accounting practices as this involves acquisition of new information. As previous literature has delineated, management accounting as a practice involves using tasks in order to generate relevant information, it could for instance be information regarding new products & services or performance reviews (Nixon et al., 2011, Coad & Cullen, 2006). With this being said, management accounting involves pursuit of new knowledge and owning characteristics to develop away from the bean counter and be more of a business partner (Byrne & Pierce, 2007, IMA, 2008, Drury, 2018).

Warner & Wagner (2019) emphasize that the 'digital sensing' stage involves scenario planning & digital scouting so that they can view technological & customer based trends, which is what the firm has been able to achieve through the use of management accounting techniques. Profitability analysis & costing has a significant role in the initial sensing stage in order to forecast the profitability which can be derived from API, the use of profitability analysis & costing has been important as it affects the way budget planning is performed, these measurements have in literature shown to be common in performance reports (Drury, 2018). This can also be connected to an interactive PPS which is an MCS system that incentivizes strategic change (Chenhall & Moers, 2015). The use of budgeting, forecasting and result reports are included in PPS (Simons, 1995). The standard forecasted budget targets are then compared later through the use of a variance analysis. The variance analysis is useful in management accounting in order to compare real results with older results, this also theoretically allows the firm to see how real results differ from predetermined budgeted targets (Drury, 2018).

Whilst for EDI the realization of using automation came through the environmental scanning stage which consisted of information gathering about the partners technological capacity & legal issues depending on their region as seen in Figure 3. Moreover the firm also created an estimation of the volume the firm could receive from implementing EDI. Moreover, measurements to demonstrate the cost reduction were used to visualize the lucrative benefits of using EDI digital techniques in contrast to using manual labor. This was performed through the use of financial / non-financial measurements & KPI:s which are useful in the opportunity seeking phase and also referred to as MCS & Measurements in the literature (IMA 2008, Frezatti et al., 2011, Knudsen, 2020). KPI:s has also been useful to better be able to measure the financial performances so that key performances could be created, this allowed the firm to set up target goals. Möller et al., (2020) has clarified that 'management accountants' should not solely be focused on KPI:s but also on the objective & key result systems which are known as

'flexible steering approaches' this is to in order actively play a role in addressing digital opportunities. The firm has been able to show success on this front with the use of KPI:s & objectives to address EDI as a digital opportunity. It's apparent that management accounting has aided by provided structure throughout the sensing stage by increasing the visualization of costs & revenues using accounting reports.

## **5.2 Role of management accounting in seizing stage**

The literature review describes the seizing stage as the ability to inspire and mobilize organizations & its complementors to develop an organization ecosystem which is ready to capture an opportunity. Seizing involves communication, alignment of stakeholders, raising capital and planning on how to execute the strategy & implementation of the new business model innovation (Feiler & Teece, 2014).

The empirical results for the 'seizing stage' can be connected to a few different stages performed by the firm and is congruent with the literature from Feiler & Teece (2014). For starters, for both EDI & API, once it became visible that there was a demand for both these services, there was an stakeholders alignment towards proceeding with EDI & API, the committee which provides the budgets for different departments base their judgment depending on the both budget planning & project planning as well as forecasting which was performed in the sensing stage. This is delineated in Figure 3 as the 'Report of financial & non-financial measurements' are the same in the sensing & seizing stage but are used to contribute with the budget planning, this is congruent with previous literature and is referred to as an interactive PPS. (Simons, 1995, Chenhall & Moers, 2015).

The projects were then communicated into the firm using road maps. Project planning & objectives have shown to be important management accounting techniques for integration of different departments (Chenhall & Moers, 2015). EDI is 30 years old whilst API is 2 years old, this meant that during the sensing & seizing stage for API, the firm already had certain knowledge regarding how they can properly communicate API throughout the firm. Moreover, for EDI specifically, the firm kept open communication with their customers & partners in order to see how they would best be able to incorporate EDI into their system after having verified that they were technologically capable. Project planning which can be categorized into budget planning or strategic planning, has shown to be important in the role of management accounting. If poor management accounting attributes are implemented then the project planning will also be poor (Frezatti et al.,2011).

Road maps have been useful in order to create an implementation strategy for both EDI & API. In the case of API, the sensing stage involved communication with current customers in order to gather feedback about the demand which is non-financial for API products and if the customers would be willing to pay for it in order to measure revenue which is a financial measure. Once this was performed, a specific team which is known as the 'product owner' team, looks at what API products exist on the market and what has existed before so that the firm could stay up to date with how the market is moving. This information has increased their

product knowledge and also strategically allowed them to use the road map with the aid of financial & non-financial measurements which increases the quality & value of accounting information (Byrne & Pierce,2007). Wolf et al.,(2020) elucidate that IT competencies are important factors for management accounting, as technological progress broadens the competencies for management accounting. The firm has had to focus heavily on the IT functions in order to make API a reality. The implementation of API follows 3 different stages, product analysis, market & customer analysis & IT feasibility & complexity. These stages are used more extensively and more effectively in the reconfiguring stage but they played a role in the seizing stage as well, this is clarified in Figure 3. These stages are categorized under 'Not Management accounting' in Figure 3 but these stages show management accounting techniques as seen on appendix 1, such as monitoring skills, IT skills & Business knowledge (Byrne & Pierce, 2007).

The first stage, product analysis is to have an overview of what products exist and what can be offered, the market & customer analysis is performed by the commercial team in order to see what customers may request, they are able to gather this information by constantly staying in touch with their customers. The last step which is IT feasibility & flexibility is to see if the firm has the software requirements for it, if not then the firm has to allocate their resources towards updating their systems so that the products can be made & tested. The IT team is then able to place an ETA for the API product. This information is then implemented to the road map. In a sense this is using rapid prototyping in order to experiment with their products, which is a part of the digital seizing stage (Warner & Wagner, 2019).

Another case of rapid prototyping can be seen from the usage of UAT (User acceptance testing) & SIT (System integration testing) as a key factor indicator, the UAT is done in conjunction with SIT in order to see how well the systems can talk with each other. Test files are also sent to the vendors in order to make sure that it is readable and contains correct content. These two areas are being measured and improved through the use of management accounting techniques, more specifically through measurements & KPIs, which has in literature shown to be useful for performance evaluation (Knudsen, 2020, Byrne & Pierce, 2007), this has resulted in the firm completing the new focus projects at twice the speed.

The road map works as a visual representation to the firm's stakeholders and other departments that work with API & EDI, road maps communicate the strategy of how they intended to implement API & also when the first products of API could be expected. The road map displays data & strategy to reach the end goal, which displays modern management accounting techniques as seen in previous literature. For instance management accounting in more recent years has become diverse & now requires that management accounting understands the data through the use of a framework to convert data into information whilst also acting as a strategic business partner along the value chain (IMA, 2008).

Management accounting has been defined as a language in order to coordinate the different activities of a project, environmental scanning of the market & product and also IT complexity factors are factors which contain hints of management accounting grounded into the strategy (Nixon et al.,2011). Road maps used by the firm are integrated and built through the use of



profit-planning systems (PPS) which can be budget planning, forecasting or results (Simons, 1995). The firm includes both financial & non-financial measurements to their road maps. The use of PPS is a form of management control tool which aids with strategic business change, interactive PPS for instance involves top and middle hierarchy managers to discuss and debate processes to manage business & strategic change (Peters et al.,2019). Studies show that integrations as shown in the case of the firm's road map, will require management control systems such as budgets & formal communication in order to integrate different units with the use of both financial & non-financial performances to track progress(Chenhall & Moers, 2015, Drury, 2018, Simons, 1995).

### **5.3 Role of management accounting in the reconfiguring stage**

Theoretically the reconfiguring stage involves routines which can sustain strategic relevance in changing markets through continuous alignment & realignment of both tangible & intangible assets. Essentially this stage is about the adaptation in order to consistently stay relevant in the market (Feiler & Teece, 2014). Warner & Wagner (2019) suggest through their model that this stage is performed in digital transformations through the use of digitalization logics and organizational redesign & culture.

The firm displays in their reconfiguring stage different digitalization logics & organizational redesign, for instance, digitalization has been able to facilitate their development process & practices. For EDI the focus has now shifted towards making sure that it can always be available and to focus on errors, which consequently affects the availability of the EDI system. This is aggravated as ‘error analysis’ in the reconfiguring stage as seen on Figure 3. In order to further develop EDI, the firm uses budget & project planning as well as KPI:s, scorecards & road maps. The scorecards are used in order to evaluate the firm's performance in terms of the KPI:s & financial/non-financial instruments. These techniques are recommended in order to evaluate objectives & performance measures in order to translate it into an organizational strategy (Drury, 2018, Chenhall & Moers, 2015).

KPI:s & scorecards are used over other management accounting systems because they tackle a lot of the issues the firm has. In order to improve EDI, the firm tries to view the issues through the lens of a user perspective, that's how they are able to identify most of their current issues which they consider critical to tackle. As the literature has shown, once digitalization incentives have been implemented, new forms of KPI:s become apparent (Knudsen, 2020). The KPI:s and scorecards are communicated to all of the general managers of Europe through a meeting in order to reach their desired target. One of the objectives for this meeting is to present scorecards so that quality of service can be measured, in order to set up the desire and the state the firm currently is at.

The current state is presented through data points which the firm has collected, whilst ‘the desire’ refers to the targets the firm focuses on in order to increase sustainability & improve EDI. When viewing the scorecards the KPIs are weighted in order to place prioritization, both performance & achievements are measured with a target set for the end of the year and start of

the year. The firm is showing techniques similar to those used during beyond budgeting. Traditional budgeting has critiques of being too rigid in its planning & involves incremental thinking, whilst beyond budgeting advocates the use of forecasts through KPIs and also exception-based monitoring & benchmarking (Drury, 2018). All of these techniques can be seen through their use of scorecards & road maps with benchmarking when performing budget planning.

The process is done through an 'efficio program' which is developed to increase efficiency and improve the businesses, the firm has identified around 8 different key performance indicators for EDI so that it may be improved. This is where the KPIs are defined so that the firm has a clear indication of what their projected target is, it could be the availability of EDI or the 'success to failure' rate of the EDI system. This allows the firm to evaluate if they are satisfied with their current ratio or if actions should be taken to improve it. Both forecasting and budget planning are performed, this is used in profit-planning system which literature delineates to be MCS & management accounting measurements, these are necessary from a strategic standpoint in order to better integrate departments & encourage strategic change (Peters et al., 2019, Chenhall & Moers, 2015, Frezatti et al., 2011).

Digitalization can improve KPIs in the sense that it can introduce new KPIs which the management accountants are able to use to understand economic performance (Knudsen, 2020). The firm uses these KPIs in order to create key indicators and focus on their objectives, this is known as a flexible steering approach for management accountants (Möller et al., 2020). The exact same procedure is also performed for API, where they have scorecards to measure the performance & achievements there as well. Benchmarking is also performed in this process in order to stay up to date with what the competitors are offering, and what prices the competitors are using so that the firm can benchmark towards them. Moreover as delineated in Figure 3 and as explicated in the sensing stage, a variance & profitability analysis is also conducted in order to see how the budgeted & forecasted values have differed from the real result after EDI & API implementation. This information contributes to the budget & performance planning of the firm (Drury, 2018).

The scorecards used by the firm not only evaluates the financial targets but also the internal business processes and the customer perspective in order to see how satisfied the customers/partners are with the services of EDI & API. From this procedure the learning and growth perspective also becomes more incipient, whilst the scorecard has not been referred to by the firm as a 'balanced scorecard' (BSC) it has traits that are very similar to the balanced scorecards. MCS has in more recent times shown that it contributes to organizational & behavioral topics in contrast to traditional performance measures such as financial performance metrics. Balanced scorecards for instance allow MCS systems to be more complex in order to evaluate performance and it also emphasizes the usefulness that MCS has to strategic management (Chenhall & Moers, 2015).

The theory of scorecards further accentuates their justification behind using it for strategic management purposes. The performance & achievements which is delineated through scorecards using financial & non-financial measures as seen on Figure 3 is used in order to

conduct their budget planning & roadmaps, the key figures for EDI are based on revenue, such as the EDI deliveries & volume. The performance & achievements essentially allows the firm to measure how the firm is progressing towards their key figures and revenue goals they've set themselves. For EDI there is a revenue goal, which can be broken into the categories of nr of customers, nr of customer needs, nr of customer meetings & nr of customers that sign up for API. This provides the firm more of a perspicuous image of how revenue can be measured, the performance report is able to track its progress through scorecards. The report then contributes to the budget & project planning, as scorecards have an strategic input when combined with MCS (Drury, 2018, Chenhall & Moers, 2015, Simons, 1995). The importance of budgeting & project planning was made clear when they could use financial & non-financial measurements with performance evaluations in order to tackle their speed issues, rapid prototyping of new products and creation of new projects are now made twice as fast due to management accounting.

The main tasks for EDI now consist of renewal of older products but also identifying bottlenecks of the system in order to identify the inefficiencies, literature has shown that identifying bottlenecks is useful in the role of management accounting (Drury, 2018). The firm is able to identify their bottlenecks through the use of an EDI specific auditing team, this is identified in Figure 3 under 'Other MA techniques'. Their role is to gather feedback and data from the performance reports & scorecards, they view different factors such as delivery quality or standard structures in order to evaluate what is consistent with the standard methods of EDI. This evidently also contributes towards the risk management of EDI, as inefficiencies place EDI at risk of being shut down. The auditing team has contributed with new inputs such as dynotrace which decreases the risks of EDI messages not being sent out to their partners or customers. They also contribute towards cyber risks which is a part of risk management for management accountants (Drury, 2018).

IT competence is important since it allows the auditing firm to take smarter actions towards improving the system. Being able to incorporate IT-competencies into management accounting broadens their knowledge & also the value of management accounting (Wolf et al., 2020, Byrne & Pierce, 2007). Risk management which is seen in Figure 3 under 'Other MA techniques' is assessed both for error analysis, but also the IT feasibility & complexity analysis. As made clear throughout the seizing stage, the product knowledge is about aligning the road map with the new products they want to produce, in order to strategically communicate to the firm what the next focus should be. This is the task of the 'product owner' team which have an overview of what products exist for API & what there is to offer.

There is also an market analysis which the commercial team is in charge of, they are always in contact with their customers and gather data regarding what customers may request in the future. For this the MCS systems such as forecasting & profitability analysis is used in strategic purpose in order to stay updated with the market & gain structure on how the demand is shifting. Lastly the IT feasibility & complexity is to risk assess how capable they are in order to pursue a new API product, is the R&D & IT team able to implement the new feature? In order to

implement new API products, the software system needs to be up to date and the technology needs to allow for the products to be an reality.

Risk assessment is used for the IT feasibility & complexity as they need to evaluate the errors which could occur from a new R&D project & if the system can handle the new functions. In terms of the market & customer analysis the firm needs to evaluate the institutional barriers & legislations since exchange of information can be sensitive. Nixon et al., (2011) clarifies in their case study that management accounting is useful mostly for the target settings & strategy, and for new developed products the conceptual phase of a new product plays an important part for risk management & strategy which can be seen through the firms use of risk assessment when evaluating the market & IT knowledge.

For the error analysis the auditing team contributes with risk management in order to implement features that mitigate human & system errors. The implementation behind EDI & API has captured value to the firm, this is something they've mentioned throughout the interviews in the sense that communications between partners and customers are stronger and that the supply chain has now become more efficient. Due to implementation of EDI & API certain routines have now become more digitalized in order reduce the costs, increase revenue & mitigate the risks of human error, but also system error. Automatization brings value to the business model & also opens up for new competencies in organizations, as seen with the case of risk management through EDI auditing. (Parida et al., 2019, Burström et al., 2021). It has become prominent that management accounting techniques are involved more in the reconfiguring stage in terms of being able to contribute with risk analysis & strategy.

#### **5.4 Comparison of MA techniques throughout sensing, seizing & reconfiguring stages**

Figure 3 has categorized the findings of management accounting in terms of MCS, Objectives & Measurements & 'Other MA techniques', it also provides an overview of the patterns, similarities and differences. The similarities which can be viewed is that Road maps has been crucial in order to build up a strong strategic plan for their objective & communication throughout the firm both internally and externally for their partners/customers. The initial objective during the sensing stage is to create a road map which contributes with an market analysis, benchmarking has allowed the firm to view the disruptive technologies, the prices used by other competitors and benchmark towards them. This is a common management accounting task in order to achieve continuous improvements of services by measuring themselves to other organizations (Drury, 2018).

Once this information has been retrieved it differs in the implementation strategy, which is the 'seizing stage', since the road map now focuses on techniques and presentation of the forecasted values & measurements of client expectations, demands & legislation issues in order to create a strategy for AP/EDI implementation. As seen throughout the sensing stage the measures such as financial & non-financial measurements & MCS such as costing & profitability analysis increases the amount of data which will be used for the Road map in the 'seizing stage'. Literature has shown that MCS as well as KPIs & measurements contribute towards profit

planning & strategic implementation (Chenhall & Moers, 2015, Simons, 1995, Möller et al.,(2020).

The technological capacity & product knowledge has been important for both EDI & API as it allowed the firm to view what the demand & expectations of these services looks in order to gain both financial & non-financial measures but also to see if partners/customers are even able to implement EDI & API to begin with. The product knowledge from the sensing stage is the same in the seizing stage as delineated in Figure 3, the same applies for 'Report of Financial & Non-Financial measurements' they are the same in both sensing & seizing stage as and are used in order to contribute to the budget planning. The seizing stage shows less usage of management accounting since it mostly consists of being able to use the report, and other non-management accounting actions in order to perform a budget planning.

The budget planning & road map are one of the most important factors towards planning & implementing both EDI & API. The budget planning is done on an annual basis in the reconfiguring stage, however the usage of MSC & forecasted values retrieved from measurements such as revenue, demand & expectations can be argued that their budget planning is more congruent with the 'beyond budgeting technique' (Drury, 2018). The product, market, customer analysis shown in Figure 3 under 'not management accounting' is a certain set of procedures the firm follows in order to evaluate the risks with the products and also what new products to focus on for API. It was clarified in the interview that the firm has certain knowledge about the shipping industry, and due to this they follow certain procedures & routines and are aware of where to focus and how the market will shift in conjunction with both EDI & API.

The 'not management accounting' techniques in the seizing stage are almost identical to the reconfiguring stage as well. This clarifies that certain knowledge or attributes are required in order to successfully implement a digital transformation. These attributes can be connected towards the characteristics of management accounting as seen in appendix 1. For instance, appendix 1 clarifies characteristics which 'Product & market knowledge' can be grouped into, they are a part of the monitoring & technical skills as well as business knowledge, IT skills & performance reporting/planning is also a characteristic of management accounting which is used throughout the seizing & reconfiguring stage (Byrne & Pierce, 2007).

In the reconfiguring stage the firm is able to compare their budgeted & forecasted results through a variance & profitability analysis, this data contributes with future predictions and also the budget planning. The variance analysis aids with seeing how the real results have managed to differ from the predicted ones performed before the budget planning. Strategically this allows the firm to control costs of unit-level activities and also see how the environment can change when different conditions are met (Drury, 2018). The reconfiguring stage has the addition of Scorecards for both EDI & API and also EDI specific auditing which plays the role of improving EDI specifically, the firm has clarified that it is not a financial audit. The audit report is used primarily in conjunction with the scorecards since it contributes with measures & key figures which become key for performance evaluation. In this sense risk management is made easier and also automatized thanks to the suggestions from the auditing team.

The auditing team uses the management accounting techniques such as benchmarking, and scorecards in order to measure the firm's EDI towards more 'standard' or conventional methods of doing EDI and this provides them an insight on how to mitigate errors which can occur. More importantly the individuals that work within this auditing team are mostly people from IT since they have relevant experience within the area in order to decisions & improvements that are beneficial to the firm. Management accounting in more recent years has shown that IT knowledge is fairly relevant in order to automatize certain tasks & also decrease human error (Byrne & Pierce, 2007). In order to do this management accountants now display more of a hybrid quality that combines both the 'business partner' template and the bean counter stereotype (Wolf et al.,2020).

Scorecards & KPIs is the improved addition of 'Measurements' as this combines all of the financial & non-financial ones in order to measure the performance and achievements. As the European Regional Officer delineated in the interview, the scorecards have been an important addition towards the budget planning, it has provided the firms a more detailed overview of budget planning and facilitated the process of making roadmaps in order to communicate the next step towards the different departments. Their justification behind using scorecards & KPI:s comes from the firm being able to tackle the issues that the firms are able to view once they do an analysis of EDI through the lens of a user perspective. MCS & the use of measurements has shown in theory to be important for budget planning from a strategic viewpoint in the sense that organizational decisions can be implemented into the firm's objectives. Poor budget planning is reflected in the quality of the MCS. (Drury, 2018, Frezatti et al.,2011, Chenhall & Moers, 2015, Simons 1995, Peters et al.,2019 Byrne & Pierce, 2007). Budget planning, Scorecards & Project planning in the reconfiguring stage had allowed the firm to identify that the EDI projects were taking a longer time to perform, there was a backlog and through the use of management accounting they were able to half that time and also hire then deploy needed candidates that could work with this issue. This identification was made possible solely through the use of management accounting which lead to an increase in effectiveness on the reconfiguring stage.

The major differences which can be seen throughout the different stages is that management accounting has initially been a tool in order to justify why there should be a budget delegated towards pursuing EDI & API and also to gain a more perspicuous understanding of the value EDI & API could bring of value through the use of added structure which came along with management accounting. Whilst in the reconfiguring stage management accounting has actively shown to be useful towards contributing with strategic decisions whilst still adding structure. Management accounting techniques, not including characteristics are more prominent during the sensing & reconfiguring stage in comparison to seizing as seen on Figure 3. This is congruent with the case study from Nixon et al., (2011) where management accounting plays a larger role in the start of a new product & service development before it is implemented and towards the end once the new product or service has been implemented.

However, the 'Not Management accounting' techniques on the seizing & reconfiguring stage does show characteristics that can be related management accounting as seen on appendix 1. In that sense management accounting has been used more throughout the seizing & reconfiguring

stage rather than sensing & reconfiguring. The major reasoning towards using the management accounting tools & techniques are not just due to the efficiency they've provided but also due to the fact that the individuals in the firm have certain knowledge in shipping, the different teams know what works and what does not. Moreover, the teams are also aware of how the market will shift and what structures & techniques should be put in place in order to meet these shifts. The concept of a dynamic capability is that it is the antecedent of an organizational and strategic routine which allows managers to alter their resource base, integrate them, as well as recombine them in order to generate new value strategies. There is best practices that exist for certain dynamic capabilities across firms in order to make them more sustainable, within dynamic markets, the dynamic capabilities resemble more of an traditional concept or routines or being analytical. (Eisenhardt & Martin, 2000). Management accounting has shown throughout the firm's digital transformation to be more useful in order to gain structure, but also to alter the routines in order to aid with strategic decisions through the use of predictions & risk assessment. Previous literature delineates that management accounting can be found in dynamic capabilities such as routine of behavior which are learnt through repetition & patterns but also that management accounting techniques in itself can act as a dynamic capability (Coad & Cullen, 2006, Peters et al., 2019, Feiler & Teece, 2014).

Management accounting has shown that it could be a dynamic capability due to how the firm is able to adapt to the changing conditions of the market so that they can continuously grow and maintain their competitive advantage through the use of dynamic capabilities. Accurate predictions for instance which is performed through management accounting can be accounted for as an dynamic capability, the same applies for strategic orchestration of human resources, which is to recruit & deploy talent in an efficient manner in order to have the right people for the right tasks (Feiler & Teece, 2014). In the reconfiguring stage management accounting has been able to contribute or perform both of these tasks through the use of management accounting alone. As seen in Figure 3 the management accounting & 'Not management accounting' can all be categorized as management accounting when viewing the characteristics and techniques of it (Byrne & Pierce, 2007, Drury, 2018 Chenhall & Moers, 2015). In this sense the reconfiguring stage alone consists mainly of management accounting techniques & characteristics which implies that management accounting by itself is a dynamic capability, it's infused throughout the different stages of sensing, seizing & reconfiguring. However, management accounting shows that it is sufficiently able to contribute to a digital transformation throughout the management accounting techniques & characteristics in the later stages of the dynamic capabilities process.

## 6.0 Conclusion & Summary

*This chapter aims to present the conclusion of information provided from the analysis & discussion in conjunction with the theoretical framework, this is in order to answer the research question 'How may management accounting contribute to dynamic capabilities for digital transformation'. The chapter will also follow up with a discussion of the theoretical & practical contributions for this study as well as an theoretical implications & lastly conclude with recommendations for future research.*

The study aims to explicate the role of management accounting to dynamic capabilities for digital transformation. This is in order to have more of a transpicuous result of how management accounting (MA) can contribute to strategies of the firm for a competitive advantage using a digital transformation. The case study has delineated that management accounting has been an important attribute towards strategic decisions throughout the sensing, seizing & reconfiguring stage of dynamic capabilities. In attempt to answer the research question, how may management accounting contribute to dynamic capabilities for digital transformation, the results delineate that management accounting has been able to contribute with the environmental scanning of the sensing stage through the usage of MCS, clarification of the objective & use of measurement. This was in order to gain forecasted & budgeted targeted values once the demand & expectations were made clear to the firm, the results delineates however that the costing & profitability analysis is equally as important as scanning both the partners & customers technological capacity as well as viewing the legislation issues in the sensing stage. Management accounting shows that in the sensing stage it has been able to provide more structure to the tasks that are delegated in order to conduct the sensing stage.

The seizing stage has clarified the process & importance of budget planning and what prerequisites in terms of information from the sensing stage is required in order to properly execute EDI & API. Arguably the results have shown that information about the market, product & IT are the more important factors throughout the seizing stage, whilst these are not considered MA tasks these 3 stages can be explained through characteristics of management accounting (Byrne & Pierce, 2007, Wolf et al.,2020). Management accounting has more prominently been able to contribute with the budget planning & road maps in order to internally communicate and integrate different departments through the use of MCS & measurements for both EDI & API, this is congruent with results from previous research (Drury, 2018, Chenhall & Moers, 2015, Simons, 1995).

The reconfiguring stage has shown a massive increase of the management accounting techniques for strategic purposes, through the addition of scorecards & EDI specific auditing. Whilst the 3 stages of market & product knowledge and IT feasibility/complexity are still in focus along with the latest attribute of error analysis for EDI, these tasks are now performed easier due to management accounting. Scorecards & KPIs has allowed the firm to do benchmarking easier and also evaluate their performance & compare themselves to their achievements, the use of MSC with scorecards & KPIs transforms the standard MA techniques to more of an interactive management system for strategy execution (Chenhall & Moers, 2015). Their justification behind using scorecards & KPIs is that it helps the firm tackle most of their



issues when they view the issues of EDI through the lens of a user perspective. The EDI auditing team incorporates IT knowledge with MA tasks, such as benchmarking, KPIs, Scorecards & Variance analysis in order to contribute with innovative suggestions towards mitigating risks & making process improvements. Literature has shown that IT tasks in conjunction with MA techniques such as KPIs & financial & non-financial measurements can contribute towards process improvements and better strategic actions. (Knudsen, 2020, Möller et al.,2020, Byrne & Pierce, 2007, Wolf et al.,2020). Management accounting techniques & characteristics for strategic relevance is dominant in the reconfiguring stage.

Whilst management accounting has shown to be useful in order to initially gain structure and also facilitate integrations of departments through the use of road maps. The realization behind the benefits of management accounting techniques become more apparent once the firm started to incorporate it for more than just structural reasons. As Parida et al., (2019) has delineated in their article, the use of modern technology is able to reduce costs & human intervention through the case of automatization in order to capture and create value to the firm's business model & digitalization has shown in previous literature to be able to increase the scope of management accounting (Möller et al.,2020). This has been the case for both EDI & API. The firm's justifications behind using the MA tools and techniques such as scorecards & benchmarks and not implementing other MA techniques is based on the fact that their techniques are able to best tackle the challenges which the firms face. Moreover, the employees have certain knowledge & experience within shipping in order to effectively know where to focus, and also what actions & procedures to take in order to continuously adapt towards the market. The management accounting techniques & systems are one of the firm's methods to utilize their knowledge, for both decision making and strategy. Management accounting may contribute to dynamic capabilities in the sense that it adds structure, ameliorates communication & visualization and also provides strategic support in order to continuously maintain competitive advantage. Management accounting has shown to the ability to contribute to dynamic capabilities by being able to perform accurate financial predictions for the future as well as having the ability to strategically identify errors so that human resources can be allocated towards those errors. This presents traits of management accounting being a dynamic capability as these tasks can be considered to be an dynamic capability (Feiler & Teece, 2014). In that sense, the knowledge & experiences the individuals have about shipping has made the role of management accounting, another dynamic capability, in the dynamic capabilities process.

## **6.1 Theoretical contributions**

This study aims to examine the dynamic capabilities as a process of strategic change & renewal through management accounting for digital transformation. Previous studies have examined the relation between digital transformation & dynamic capabilities for strategic renewal & how prominent dynamic capabilities are for digital transformation. There are also previous studies about management accounting which has used dynamic capabilities for profit planning. This study is unique in the sense that it aims to explain & contribute information about the role of management accounting to dynamic capabilities for digital transformation. Through this research question the study highlights how management accounting can contribute to strategic

change or renewal, not just the operational activities which are short term oriented in nature. The results provide a more transparent perspective of the long term work in dynamic capabilities which is more future oriented. In that sense the second contribution of this study is that it contributes towards the research within the field of strategic management accounting.

## **6.2 Theoretical & Practical Implications**

The theory of management accounting has been implicit that management accounting does contribute towards strategy, structure and integration through the use of its techniques & tools (IMA, 2008, Drury, 2018, Möller et al., 2020, Chenhall & Moers, 2015). The case study has delineated a couple of implications both theoretical & practical which can be observed. For starters management accounting has indeed shown to play an important role for the use of strategic decisions & clarifying objectives which has facilitated the implementation of a project. However, these don't work sufficiently as they are combined with techniques which are required within certain global industries. Management accounting has delineated throughout this case study that it becomes effective when combined with proper knowledge & experience to gain a competitive stance in the market. Due to this the theoretical implication is that 'knowledge & experience' about certain industries is a factor behind how the role of management can shift towards competitive advantage.

Practical Implications behind this study suggests that management accounting tools used in this case study can be useful in order to attain structure & broader visualization throughout the environmental scanning when viewing the market for opportunities. Lastly as seen in the case study, with digital transformation being implemented, the scope of management accounting contribution has also increased, digitalization has automated certain processes which allows new management accounting techniques & tools to become more significant. This concept can be applied to firms who have recently implemented a digital transformation in order to review their management accounting in hopes to make it more effective.

## **6.3 Recommendations for future research**

The study covered the role of management accounting used by one firm specifically in regards to dynamic capabilities for digital transformation. The reasoning behind using this firm was due to their strong market position which complements the criteria of the RBV. For future studies, a smaller firm could be investigated which still has implemented a digitalization project for the purpose of competitive advantage in order to see how the results would differ from a smaller firm. Moreover, this study does not aim to provide suggestions regarding what management accounting tools & techniques are most useful to use throughout the different stages of dynamic capabilities for digital transformation. This could be an area of interest to research using a larger sample size so that comparisons can be made through different industries. Lastly, the conclusion of this study has shown that the knowledge & experience are the pillars behind which the management accounting techniques & tools are based on. Future studies should therefore accentuate their focus on what kind of knowledge & experience is required within certain industries in order to use management accounting effectively for strategic renewal through dynamic capabilities.

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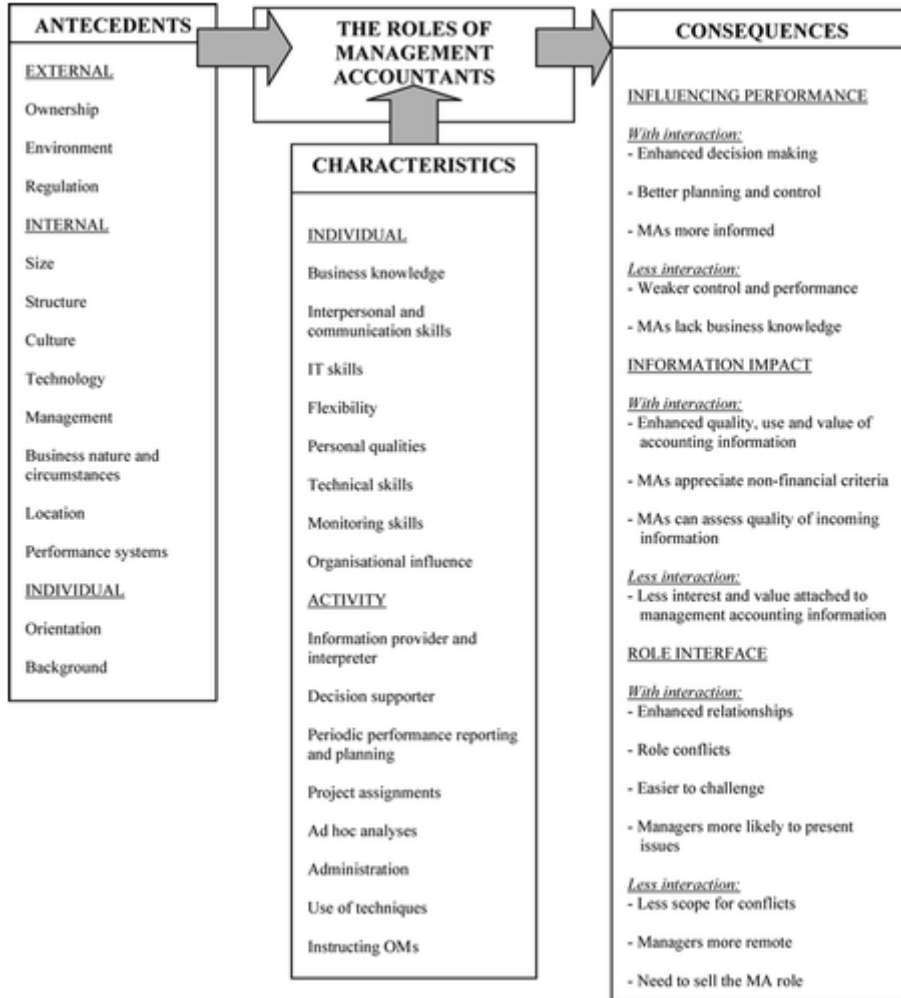
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# Appendix List

## Appendix

1

Source: Byrne, S., Pierce, B. (2007) *Towards a More Comprehensive Understanding of the Roles of Management Accountants.*



## **Appendix 2 – The interview guide**

### **Questions to ask during interview**

*What are some of the financial & policy instruments that you use for API/EDI? (also known as management accounting tools that can be, what measures do you look at? Like costs, income, revenues, budgets, cash flow, customer value etc, profitability analysis, investments, kpis)*

*How do these instruments contribute towards sensing in the firm?*

*What is the purpose behind these management accounting tools?*

*What does API & EDI provide you competitively, how does it grant a competitive advantage? Does it make relationships better with customers, does it reduce costs? What is it?*

**What does management accounting contribute with? (What would you say these management accounting practices have done to facilitate new digitalization initiatives?)**

**(follow up question: Please explain more on how management accounting does this?)**

**How are these instruments used in terms of dynamic capabilities?;**

- **How do they contribute to sensing (market analysis both externally and internally)**
- **How do they contribute to seizing**
- **How do they contribute to reconfiguring**

**How did this digitalization project come about? What was it that inspired them to make this change? Was a change in customer behavior, or perhaps a disruptive technological change?**

**How did you perform the 2nd step seizing? Was it through prototype testing? Did you create a new business model? Such as an subscription based one? And how was this incorporated into the main business model? (What did management accounting do in order to distribute it into the firm/business model?).**

**What aid does management accounting provide with in order to seize the opportunity with this project? (Seizing can be to raise capital or to mitigate risks, align stakeholders, provide strategies etc.)**

**How does management accounting contribute to adapting the business model to match the new opportunities? (That are now gained with this digitalization project)**

**What does your reconfiguring stage look like? (What measures & actions are performed in order to sustain and make ADI & EPI relevant in the market) Are you creating new digital strategies? Is the budget being increased towards advancing it even more?**