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**From a 'bean counter' to 'business partner':
An explorative study on the role of the controller at H&M Group and DB Schenker in
Sweden**

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Abstract:

Since the 1980s, the role of a controller has been extensively discussed. The growing importance of the changing role is still widely debated in recent literature. Relatively, several scholars tried to address the changing ideology of a controllers' role from its traditional practices. The accelerated advancements of business settings and variations in external circumstances continue to modify the character of the controller, advising that parallel literature is still under development. Therefore, this research aims to add to the existing literature by investigating the potential drivers affecting the evolution of a controller's role and exploring its current state.

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Keywords: Business partner, controller, management, cooperation, hybrid practices

Purpose: The purpose is to investigate and add to the management accounting literature about the fundamentals behind a controller's role evolution and its multi-functional trait.

Methodology: A qualitative case study approach is chosen with semi-structured interviews as primary source of information since it easily lets the research produce new for existing ones.

Theoretical perspectives: The theoretical chapter will present four sections comprising of management and controller's perspectives, cooperation between the two parties and external developments. The concepts are chosen to allow different interpretations of the empirical material of this paper.

Empirical foundation: A summary of the main findings' "toolbox" is provided. All relevant findings from the interviews are extracted into six sub-themes to provide clearer overview of results.

Conclusions: The final part summarises the contribution of the study to the theory by answering the three sub-questions of the research and it includes a future research recommendation as well.

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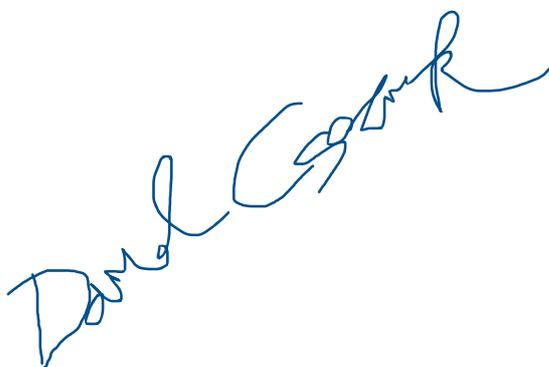
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Table of Contents

1. Introduction.....	6
1.1 Historical developments	6
1.2 Background	7
1.3 Problematization	8
1.4 Purpose and Contribution.....	10
1.6 Research Outline.....	11
2. Theory.....	13
2.1 Management Perspective.....	15
2.1.1 The management and its concept of controlling.....	15
2.1.2 Five Criteria of Controlling Approach	16
2.1.3 The controlling scope	19
2.1.4 Services to the controlling subsystem	20
2.1.5 Strategic and operational controlling.....	20
2.2 Controllers' Perspective	22
2.2.1 The controller's role and developments	22
2.3 Managers and Controllers cooperation	24
2.4 External Developments.....	25
2.4.1 Globalisation, supply chain and trends in sustainability practices.....	25
2.4.2 Technology and big data	26
3. Methodology.....	28
3.1 Case Selection	29
3.2 Data Collection	30
3.3 Discussion, Criticism of Methodology.....	32
4. Empirical Data	33
4.1 Controllers and Managers	34
4.2 Globalization and Modern Supply Chains	35
4.3 Technology and Big Data	37
4.4 Business Trends in Sustainability.....	38
4.5 Financial, Operational, Managerial Aspects.....	39
4.6 Hybrid Role	41
5. Analysis.....	42
5.1 Managers and controllers.....	42
5.2 Globalization and Modern Supply Chains	45
5.3 Technology and Big Data	48
5.4 Business Trends in Sustainability.....	52
5.5 Financial, Operational, Managerial Aspects.....	54
5.6 Hybrid Role	56

5.7 Overview chart.....	58
6.0 Discussion	61
6.1 Managers and Controllers	61
6.2 Globalization and Modern Supply Chain.....	62
6.3 Technology and Big Data	62
6.4 Business Trends in Sustainability.....	63
6.5 Financial, Operational, Managerial Aspects.....	64
6.6 Hybrid Role	65
7. Conclusion and Future Research	66
Reference List:	68
Appendix.....	72
Appendix 1,.....	72
Data Analysis Summary and Findings of Interviews	72
Appendix 2.....	79
Interview Guide - Controller.....	79

1. Introduction

This section starts by recognizing the historical developments and background of the controller's role to reveal its significance. Problematisation is designed to serve as the requirement of this study. Overall purpose and contribution are discussed, addressing the research question of the paper. Moreover, the disposition will further illustrate the structure of this paper.

1.1 Historical developments

"Comptroller" was first realized in the 15th century as an alternative to the controller where the expression itself is a consequence of its French genesis term 'counter-roullour' (Källström, 1990). In the 1800s, US organizations applied management control systems (MCS) to manage better organizational complexities such as risks, losses, and failures related to finance (Van der Kolk, 2019). While implementing actions to solve these complex problems arose, a 'controller' to manage and monitor those actions (Källström, 1990; Samuelson 2004). From a conventional standpoint in the US, the controller was known to have the prominence of being a scorekeeper as the roles were primarily repetitive and limited to constructing historical financial data. Moreover, controllers were hardly engaged in any strategic decision-making (Granlund & Lukka, 1998; Baldvinsdottir et al. 2009; Hagel, 2015).

Aside from the US outlook, this paper dives into the controller's role in a Swedish context where the concept was primarily found in the late 1970s in Sweden. Two similar roles but with different traditions were unfolded, known as the 'controller' and 'treasurer' in Sweden (Källström, 1990; Lindvall, 2009). The treasurer roles are more central and dynamic, and the controller represents parts of the responsibility (Källström, 1990). In a Swedish context, the roles of a business controller are defined to have close ties with top management and continuously support decision-making within an organization (Källström, 1990; Granlund & Lukka, 1998; Lindvall, 2009, Goretzki et al. 2013). Additionally, according to Källström (1990), business and accounting controller roles have overlapping responsibilities. However, it was also mentioned that the accounting controller plays a significant role in identifying financial data, whereas a business controller is an expert for analysis (Källström, 1990).

The function of the controller evolved from its classical accounts and grew into a more tangled role in the 21st century (De Loo et al. 2011; Graham et al. 2012; Goretzki et al. 2013). The primary reasons for the complex development of a controller's role are increased competition, digitalization, and globalization. Moreover, the financial and debt crisis in 2008 and 2010 furnished an unstable environment in businesses and consecutively contributed to the changing role of a controller (The Mckinsey Quarterly, 2009; Antoine-Marie, 2017; Bhimani, 2020).

1.2 Background

Researchers of management accounting research have widely debated a controller's work roles and changes since the 1980s (Hopper, 1980; Armstrong, 1985). Lasyoud et al. (2018) defined the changes as the ability of management accounting systems to adapt to the variations of a firm's internal and external environments. Much of the recent debates followed the conventional practices or bean-counter views of the controller, mainly highlighting the negative aspects of the public consciousness (Fridman & Lyne, 2001; Vaivio & Kokko, 2006; Baldvinsdottir et al. 2010).

The concept of the controller's role as a business strategist can be first identified in the 1990s as the management accountant's role grew of significant importance and, consequently, were involved more in business processes (Oliver, 1991; Hrisak, 1996). Nowadays, controllers can be symbolized as mere 'value-adding partners' as the role transcended from its 'number crunching' practices (Erhart et al. 2017). Controllers' attributes transformed beyond functional lines to contribute to business actions such as cost management, refined efficiency, and consistently added value to organizations (Hrisak, 1996). Globalization, advanced technologies, digitalization, and increased competition have affected the manufacturing and business environments to an unprecedented level. These factors are causing a pattern shift in assumptions concerning different job specifications within firms (Berger & Frey, 2016; Oesterreich et al. 2019).

Today's businesses are dynamic in work culture, adaptive to rapid changes in the environment, implicating the need for a control system that is fast and responsive to changes. Likewise, this raises the demand for a firm's financial management capability to respond to

ongoing developments (Baker & Powell, 2009). Financial management can be considered as the primary responsibility of a controller. Thus, a controller's primary functions are mostly related to finance, budgets, forecasts, and overseeing the financial developments of a firm (Sathe, 1983). Further on in this thesis, individual controller perspectives and potential drivers of change will be highlighted.

1.3 Problematization

Numerous scholars have mentioned the changes in manufacturing and business environments caused by globalization, digitalization, machine learning, and its ripple effects on different controller roles (Brown & Lauder, 2006; Zoni & Merchant, 2007; Rouwelaar et al. 2008; Graham et al. 2012). During the 1970s, Vatter (1971) emphasized that the position of the controller would reinforce its place in the future. The author also mentioned that all organizations would lack the assistance of a controller for maintaining economic balance (Vatter, 1971). Almost 40 years and following, continuing research on controllers still contend that the role is yet to transform more in the future (Hyvonen et al. 2008; De Loo et al. 2011; Graham et al. 2012).

Hrisak (1996) foretold that the position of the controller would spring more towards the vital and consultancy approach due to technological advancements.. The author also mentioned that new modes of IT would enable controllers to apply more analytical and interpretation skills of data. Likewise, Hyvonen et al. (2008) also mentioned that widespread use of integrative IT systems would transform controller roles. Moreover, according to Kumar (2005), all finance operations will face immense challenges due to globalization. La Paz (2020) further confirms that the controller roles will correspond with the changes of finance operation. Therefore the need for modifications of any role, such as skills of traditional controllers, might also need to be adapted according to the change (Seal 2001; Kumar, 2005). Hyvonen et al. (2008) also accentuated that the dynamic role of the controller demands to be more future-orientated, acknowledging the speed of external circumstances changes. Additionally, Yazdifar and Tsamenyi (2005) identified the institutional factors affecting the controller's role.

Elbanna's (2009) verdicts depicted that controllers are devoted to organizational decision-making processes. The author hinted that managerial expectations towards controllers are

changing and are being more adaptive to differences. Similarly, Zoni and Merchant, (2007) demonstrated that management involving controllers in day-to-day decision-making on business processes positively affects company performance. However, opposing statements are also evident in recent literature. According to Indjejikian and Matějka (2006), involving controllers in organizational decision-making is not always beneficial and suggests that top management should have formalized controls instead. Graham et al. (2012) also demonstrated that the controllers' role has developed only in terms of enterprise actions and positioning, but the role itself did not transform simultaneously. Wolf et al. (2020) illustrated that controlling should only be implemented as a tool for the management to stay in its firm-wide goals. Schlegelmich (2003) emphasized that it weighed more towards the management to reap the full benefits of conducting efficient operations by interlinking practices. This ongoing debate is still questionable to determine whether the change happened or not. According to Lasyoud et al. (2018), the change in controller roles is not homogenous. The author argues that controlling roles can be dynamic, follow a heterogeneous pattern, and therefore be subjected to change. Critics have hinted least effort to learn the course of variation in management accounting (Lasyoud et al. 2018). Youssef (2020) added that changes could be of different dimensions or types, and it is essential for firms to understand the fundamentals driving change for more efficient business operations. The author also implied that external(macro) and internal(micro) played a significant role in shaping and changing the controller's role and management techniques.

The future of the controller's role is still subjected to reform and adjustment, but the primary reasons enforcing the evolution still need to be investigated at large. Thus, creating an area of importance to conduct a study on a controller's role dynamics. It is increasingly essential for business officials to understand the current drivers of change for maintaining efficient business operations (Youssef, 2020). According to (Seal, 2001), increased globalization has contested every working position, requiring managers to engage more in strategic thinking and employees' requirements to think globally and extend the operational role to understand country-specific or global political stance. Likewise, Gunasekaran et al. (2015) mentioned the possibilities of natural or political events hampering business supply chains in a global context.

Recent literature brushed up and emphasized future research on the effects behind the advancements of a controllers' role. Nevertheless, rapid developments worldwide and the digitalization of services create additional room for studies like this to add to existing literature. Moreover, management controlling methods and perspectives in general plus controllers are changing (Berisha, 2017). Controllers' jobs are growing important as the role itself crossed boundaries from conventional operations while maintaining close ties with the senior management. The close relationship results from the growing importance of a firm's requirement to have adequate services of the controlling subsystem. In other words, controllers are vital communicators and play a significant role in any organization's cross-functional teams, aiding the controlling subsystem, which is related to the overall controlling concept (Berisha & Asllanaj, 2017). It is evident from above that current research on the transformation of a controller's role is still under construction. Even though prior research led to several discussions and stressed the importance of identifying the drivers behind a controller's role evolution, it is fair to understand a substantial gap in today's literature where this paper aims to add valuable insights. Therefore, the authors of this paper find it relevant to investigate the controller role's current state and identify the key drivers of change with the following research question presented in the next section.

1.4 Purpose and Contribution

It is possible to determine from the problematization of this paper that many scholars defined separable outcomes related to the change of the profession at interest. Nevertheless, it can also be understood that limited papers have drawn attention to bring together the findings of several authors for comparability and accountability.

Hence, this study looks forward to examine various perceptions of controllers by elaborating on the practices in a Swedish context. The primary purpose is to identify and add to the management accounting literature about the fundamentals behind a controller's role evolution and its current multi-functional trait if so. The consequences of this study can be used to criticize, confirm and compare the extent of the literature mentioned in the problematisation of this paper. Regarding all respected scholars mentioned in the essence of this paper's problematization, the research sub-questions were further formulated precisely to provide wide interpretations. Further below, an analysis overview chart is demonstrated to show how the results of this paper contributes to relevant sources.

The theoretical contribution of this paper will be two-fold. This thesis will provide an in-depth understanding of a controller's role and provide valuable insights into the role's current drifts. Scholars of management accounting can use this paper's results to determine the changing pattern of the sources mentioned above and understand the pattern of the changing factors affecting the role. Arguments for and against this paper's research question will be led by reflecting on established research, thus contributing to more updated information of the developments behind a controller's role in a Swedish context. For practical contribution, it can be predicted that this paper will provide both future controllers and management with a better understanding of the role. Management can use this paper's findings to understand the controllers' functions with the top management. Future business candidates or controllers interested in working in a Swedish global context can extract valuable information for their respective careers.

This research is built upon real-life practices where scholars, students, or anyone interested in the finance function can benefit from first-hand knowledge for their respected purposes.

Research Question: *What are the key drivers behind the evolution of a controller's role?*

Sub-Questions:

1. *What are the formal features of the relationship between controllers and managers?*
2. *What kind of external global factors contribute to developing the change of the role?*
3. *How has controlling become a multi-functional "hybrid" role if so?*

1.6 Research Outline

The introduction chapter (*chapter 1*) is to produce explanations indicating the requirement for this study to be conducted. Thus, generating the research question to fulfill this paper's expected contribution.

The theoretical chapter (*chapter 2*) will address the concepts that will allow wide interpretations of the empiric material of this paper. In order to produce different arguments related to a controllers' role, four different sections of theory representing management and

controller's perspective, cooperation between the two parties, and external conditions effects will be elaborated. A table stands depicting how the theories will be elaborated presented in detail in chapter 3.

The methodology section (*chapter 3*) outlines the chosen setting, the research strategy, and the approach to answering the study's research question.

The empirical section (*chapter 4*) represents all the relevant findings of the interviews, summarized into six main sub-themes. Each of these sub-themes will be extended and analyzed using the theories presented in chapter 2. Each of the sub-themes will be tested with the most relevant sections presented in the theoretical chapter.

The analysis section (*chapter 5*) considers the most relevant theoretical inputs according to the sub-themes identified in the empirical section. Similar headings will be followed for consistency. Significant findings will be analyzed reflecting on the four sections presented in the theory part. With the overall intent to draw concluding remarks on the role evolvement and drivers

The discussion section (*chapter 6*) will highlight the essential parts of the outcome of the analysis chapter by attending to the research questions generated by this paper. The conclusion part (*chapter 7*) explains the final remarks of this study and proposes future research possibilities.

2. Theory

The following part of the thesis will display general concepts asserting to the role of a controller. Even though the Empirical Data part is divided into six different topics, segments are divided into four parts here to construct a better outcome of the initial intent of the dissertation.

It is so, because the most suitable academic sources required a different theoretical structure in the report, the parts are still interrelated overall. The general aim is to investigate how each aspect (2.1, 2.2, 2.3 & 2.4) can be matched and compared to empirical findings/previous research in studying the effects on the role of the controller. However, each part can be treated independently, but it does not limit the authors' capacity to draw joint discussions in interpreting group results. The final outcome can be found in the final two chapters.

Theoretical overview	
<p>2.1 Management Perspective</p> <ul style="list-style-type: none"> • <i>Management & controlling concept</i> • <i>5 criteria of controlling</i> • <i>Controlling scope</i> • <i>Services to the sub-system</i> • <i>Strategic and operational controlling</i> 	<p>Theory presented here is to demonstrate managerial perspectives and the overall controlling concept that can be undertaken by management. The management perspective is related to four out of six sub-topics in the analysis in order to study the effect on the role of controllers for changing managerial behaviour.</p>
<p>2.2 Controllers' Perspective</p> <ul style="list-style-type: none"> • <i>Controller's role in management</i> • <i>Professional identity</i> • <i>Inevitable skills and traits</i> 	<p>This section acknowledges the proficiency requirements of a controller for achieving successful organizational goals. It will aim to investigate the differences in the role caused by changing management and external developments.</p>
<p>2.3 Managers & controllers' cooperation</p> <ul style="list-style-type: none"> • <i>Relational scope and boundaries</i> • <i>Theory on business relational aspects</i> 	<p>This section will present the professional relationship between the controllers and managers and its dynamics. The theory presented here will be further used to</p>

	investigate the effects on a controller's role by reflecting importance in cooperating practices.
<p>2.4 External impacts</p> <ul style="list-style-type: none"> • <i>Globalisation, supply chain & sustainability trends</i> • <i>Technology & Big Data</i> • <i>Information systems</i> 	This section comprises the different outcomes of external impacts that ultimately affect a controller's role. The authors intend to examine externalities' ripple effects by elaborating on management followed by controllers' role.

The figure above includes a summary that the authors collected and organized to fit the paper's original intent. Further below, the authors will demonstrate the use and applications of each of the sections and provide an understanding of how the results of this paper contribute to the theoretical framework. Resources stimulating the nature of the developments around the controlling role have been presented in the history and background sections. Furthermore, this study's problematization section represents the views of various scholars suggesting different results. To determine the underlying factors affecting change and further confirm the practices of a controller as suggested by current literature.

As shown in the figure above, section 2.1 is to be used to show a better explanation of the factors related from a managerial perspective. The five different sub-parts fall in line with the way a manager or management intends to operate. The basic assumption here is that management behaviour and actions can substantially affect the professional role. Moreover, sub-parts can be evaluated from an individual, group, or service perspective and can be subject to cross-section analysis if the authors find it necessary. Therefore, it is possible to expect the authors to investigate how section 2.4 affects the management perspective and transform the controller's role in general.

The controlling approach selected and changing external conditions are supposed to be of significant influence on shaping the role of the controller. Therefore, the controller competencies mentioned under section 2.2 are subjected to generate essential outcomes. Moreover, the controllers' function and developments are most useful at interpreting results

due to the authenticity of recent literature. Finally, external environment factors will be used to determine additional factors affecting the controller's role in and around its function.

2.1 Management Perspective

2.1.1 The management and its concept of controlling

First and foremost, it is essential to understand the concept of controlling and its functionality. Controlling is one of the critical subsystems of the internal management system of organizations, which performs the planning (strategic and annual operative), analysis, and control of the differences by comparing plan-fact data. The controlling mindset, explained in detail below, can be predicted from both managerial and individual perspectives. It coordinates these tasks with its organization and information system. As a result, it provides an appropriate decision-making tool for management to dynamically monitor environmental change (Graham et al. 2012). According to (Graham et al. 2012), the role of the controller did not transform completely. Instead, the development of its action depends on the controlling method undertaken by the management.

During a long period of practical development, controlling has grown into a modern, theoretically versatile methodology, which today is increasingly considered an independent branch of management science. It can also be mentioned that control can be considered an organizational subsystem where the target focuses on increasing management efficiency. Moreover, it can also be considered the set of tools with which the organization ensures that it can stay on the path to achieving its goals (Wolf et al. 2020). Therefore, the way a firm chooses its philosophy to conduct its day-to-day practices can affect any professional role.

In the following section, the concept of control is presented by defining its most characteristic elements, forming the essence of the corporate controlling concept. This concept is based on the principles and philosophy of controlling, which defines management based on authority, forecast, quantity, measurable achievements, personalized and unity of responsibility, response to deviations from the plan, and the obligation of the competent authorities to take action (Oesterreich et al. 2019). Controlling has well-defined goals, tasks, and tools, and the organization is the scene of its implementation. The implementer of the tasks is the controller cooperating with the managers, who works with the general subsystems of corporate management and the particular subsystems supporting controlling (Wolf et al. 2020).

In general, five criteria can be mentioned to characterize the mindset of controlling and its direction, which are the following (Lambert & Sponem, 2012):

Controlling-mindset				
Decision orientation	Future orientation	Goal orientation	Congestion orientation	Cost orientation

The consistent and joint application of the listed five criteria in the management of organizations supports a unique approach to controlling and strategic innovation. It affects all professional roles in planning, implementation, accounting and appears as an imaginary regulatory circle, both in terms of performance, financing, and cost management (Schlegelmich, 2003).

2.1.2 Five Criteria of Controlling Approach

Future orientation

Feed-forward is the property of the controlling system. Controlling focuses on the future but accepts the examination of the past and considers the extent to which it can influence future events (O'Grady et al. 2016).

An important step is to develop annual plans, within which we set goals for the company as a whole and its units over an annual time horizon. Annual time is not enough for future-oriented management. Planning continuity must be ensured, and this problem is solved by three medium-term (business) plans covering five-year time horizons, which integrate annual planning in the form of rolling planning. Strategic planning integrates annual and medium-term planning, from which it differs significantly in its methods and techniques (Pietrzak, 2015).

Goal orientation

Ongoing goal-setting, which is the foundation of an organization's performance, performance measurement, and evaluation, primarily focused on resolving bottlenecks, prevents organizations from entering a defensive state. It requires well-defined, realistic, and achievable goals (O'Grady et al. 2016).

The initial condition for the controlling scope development is the definition of the goal and the establishment of the goal hierarchy. Managers keep in check for the goals. The presentation of the design parameters and the control values is the controller's responsibility, and the decision is the responsibility of the management.

The company's target system is often depicted as a pyramid or a pyramid. At the top of the pyramid, there are a small number of generally articulated goals, while on the "pedestal," there are many specifically defined normative goals. At the top of the pyramid are strategic goals called creeds and philosophies, followed by goals at the tactical and operational levels, which express specific, quantifiable aspirations (O'Grady et al. 2016).

Congestion orientation

The weak points of the organizations are called bottlenecks, which are the first to cause problems under specific load conditions, and without which growth and expansion are inevitable. By bottleneck, primarily capacities are meant.

An essential feature of modern controlling activity is the bottleneck orientation, the concentration on the result potentials. In the context of congestion orientation, traditional resources should be explored first and foremost: labor, machinery, materials, money, and so on. and modern resources: information, technology, innovation capacity, etc., which limit the expansion of activities.

Their resolution is also a factor that increases efficiency. It is necessary to determine the minimum factors. Some optimization techniques, such as mathematical programming models, provide a good opportunity (Kastberg et al. 2016).

Cost orientation

Cost management is one of the best-known elements of the controlling methodology. Most of the companies came into contact with controlling precisely because of this approach. The cost approach of controlling is based on the incurrance of costs for a given purpose.

The aim of controlling management is to make costs transparent. Therefore, it is increasingly opposed to the "non-divisible" and "non-transparent" and "unplanned" cost categories.

Controlling focuses primarily on costs, as the price is a market category that companies have less opportunity to influence. The company could only make a profit by keeping its costs below the market price. Businesses have the greatest freedom in designing the cost structure, so creating an efficient cost structure is extremely important for a company's success.

One of the cornerstones of the controlling philosophy is that costs must always be shown where they are incurred. An effective tool for this is to design a system of cost centres.

Cost centres are the little places in the value creation process, the performance of which can still be measured with well-defined inputs and outputs (Jensen & Meckling, 2007).

Decision orientation

The main objective of the controlling system is to keep the management in a constant competitive situation with the decisions prepared by its tool system and make quick and meaningful decisions with its information. However, it is a significant task to constantly monitor the effects of the decisions introduced and, if necessary, to propose changes. Proper preparation of decisions and developing a decision support system are essential. The more efficient the controlling system is, the better it can support management. It can be treated as a fundamental thesis that effective controlling operation can only be imagined. The controlling system works together with a properly designed and regulated management responsibility system (Hyvönen et al. 2008).

2.1.3 The controlling scope



Fig: Basic Process Of Controlling

The controlling regulatory is an approach master map that defines the place of controlling in the management of organizations. Getting to know, mastering, and becoming a routine of the thought content behind it is a success factor in achieving a new success (Berisha, 2017).

As part of the planning phase, it is to determine what is to be achieved and the most appropriate method. The management phase includes three sub-areas: 1. Recording factual data - what is the current situation. 2. The plan-fact comparison - how significant and in what direction the deviation from the planned one is; 3. Analysis of the discrepancies indicates its causes and provides a basis for its expected quantification. As part of the feedback phase, it is possible to separate the predicted values from the analysis of the deviations and the formulation of management measures, in other words, what measures are needed to achieve the goal.

Planning is a time-limited phase before implementation, from the definition of the goal to adopting the agreed plan. Its speed and efficiency also determine the effectiveness of the other two stages. Management (measurement, analysis) and feedback from the beginning of

plan implementation to the evaluation of the achievement of the goal also operate in a limited time, but within this in several cycles related to time and organizational hierarchy.

The scope of regulation becomes complete. It additionally provides information, forecasts, and experiences for the next task and period, which points to the directions of development, summarized in the evaluation of the achievement of the goal.

The controlling regulatory circle characterizes the whole organization and its parts. It is connected to the temporal and organizational hierarchy (management levels, units) within each company, but its sections' content and detail are different. The methods and tools used must be chosen accordingly, while the procedures are the same, but the frequencies are tied to the time hierarchy (Berisha, 2017).

2.1.4 Services to the controlling subsystem

The most crucial service of control systems is the support of management decisions. To do this, corporate transactions must be processed, the information processed provides a basis for preparing the report, the reports must be audited and presented to decision-makers.

The most critical element of the work is the common interpretation of the results. Decision support as a service encompasses the latter two, thus presentation and standard interpretation. (Seal, 2001) A service of decision support has the same efficiency conditions as any other service activity. Efficient transaction processing is unthinkable without the support of proper integrated IT systems. The role of IT will no longer be emphasized as much. Human added value will be more decisive. The goal is to reduce the time and cost of the controlling service significantly. Meanwhile, the time and cost of transaction processing, reporting, and auditing need to be reduced to spend more time and cost on decision support (Berisha, 2017).

2.1.5 Strategic and operational controlling

Relating to different dimensions, strategic and operational controls are separated whereas financial aspects are tied to both controls. While strategic controlling focuses on the long-term goals of the company, operational controlling focuses on the company's short-term goals (Seal, 2001). Previously, controlling systems were built and developed primarily at the operational level focusing more on the short-term consequences. Since the 1990s, it was predicted that the profession would develop more in terms of strategic and consultative

context (Hrisak 1996). Contrary to controlling, there has been a growing need to support corporate governance fully, and therefore it is essential to include controllers in daily decision making. The strategic aspect of controlling is tied with strategic controlling (Elbanna, 2009).

Strategic controlling

The environment of strategic management of companies is characterized by increasing dynamics, internationalization, and complexity. Therefore, the role of strategic controlling is particularly decisive. Even though some authors suggest that controller decisions are hardly embedded into a company's strategic goals (Granlund & Luka, 1998; Baldvinsdottir et al. 2009; Hagel, 2015).

Hyvonen et al. (2008) reflected upon the external developments and the increasing need for controllers to develop respected roles associated with forward-thinking. Strategic controlling undertakes the multi-year planning, plan-fact analysis, and related information services of strategic planning. Strategic controlling, as a subsystem, is an indivisible element of the strategic administration system of companies (strategic management) (Seal, 2001).

Strategic controlling should assist the administration in its adjustable environment and long-term operation (Kober et al., 2007). Kumar (2005) and La Paz et al. (2020) illustrated the importance of external conditions affecting all strategic operations. It follows that the critical task of strategic controlling is to detect, identify and encourage management as soon as possible to make changes, especially those that occur in the environment and are relevant to the company's operations. Thus, strategic controlling examines opportunities, dangers, and risks, which can be considered the potential for success (Lasyoud et al. 2018).

Strategic controlling supports management in ensuring that the company operates in a long-term goal-oriented manner and adapts to its environment. Tools for strategic controlling include technology trend analysis, SWOT analysis, value-oriented corporate governance tools, and a balanced scorecard. In contrast, operational controlling focuses on activities and processes to which inputs and results can be linked (Karlsson et al. 2019).

Operational controlling

Operational controlling is to manage the company with appropriate tools and procedures within a business year. Operational instruments primarily provide financial information on planned and implemented measures. It supports the company's profit and liquidity management, making the right decisions and ensuring its existence and survival (Berisha, 2017).

By achieving objectives, the effective implementation of operational controlling activities can occur, namely through the realization of liquidity, profitability, and efficiency. The time horizon of an individual's activity can be both short and medium-term. Operational planning spans the company's annual plans, while tactical planning spans a 3-5-year time horizon (Berisha, 2017).

Operational controlling does not forecast past actual values during planning but determines and takes as a basis the requirement values corresponding to the expected regular operation of the plant. Thus, the cost values are designed based on the expected, average economic performance. Accordingly, the related specification - fact comparison makes it possible to reveal deviations that can be evaluated and usually corrected. It takes its information primarily from internal accounting, so where there is no adequately established internal accounting, operational controlling cannot function satisfactorily either. The tools of operational controlling include finance, accounting, cost and profit, loss calculation, economic analysis of the investment, margin calculations, statistical and profit calculation, examination of capital processes, and indicator systems (Baldvinsdottir et al. 2010).

2.2 Controllers' Perspective

2.2.1 The controller's role and developments

Even though a handful of the literature suggests management requiring formalized or strict controls for smooth operations where the controllers are merely required to follow (Indjejikian and Matějka, 2006; Graham et al. 2012), evidence relating to the importance of the controller's role is available. The controller has a significant role in developing the controlling concept, as the individual's activities cover all areas of the corporate hierarchy. Professional and personality requirements are associated with the controller as a position and

as a function. The controller shapes and follows the managerial processes of setting company goals, economic planning and management, and shares the responsibility for achieving the goals with the company management (Zoni & Merchant, 2007).

General Approximation of the controller position
<ul style="list-style-type: none"> • Supporting the management with business tools
<ul style="list-style-type: none"> • Providing the possibility of self-inspections within the framework of the plan
<ul style="list-style-type: none"> • Detecting and analysing the differences
<ul style="list-style-type: none"> • Informing responsible managers about deviations and discuss necessary actions
<ul style="list-style-type: none"> • Bridging the mindset of different disciplines
Professional requirements for the controller
<ul style="list-style-type: none"> • Knowledge of economics and social sciences
<ul style="list-style-type: none"> • Comprehensive knowledge of the branches of accounting
<ul style="list-style-type: none"> • Organizational knowledge
<ul style="list-style-type: none"> • Proficiency in plan-fact analyses and application of statistical methods
<ul style="list-style-type: none"> • Knowledge of computer technology and management information systems
<ul style="list-style-type: none"> • Sense of marketing problem
<ul style="list-style-type: none"> • Language skills
Personality requirements (Erhart et al. 2017)
<ul style="list-style-type: none"> • Analytical, synthesizing and creative skills
<ul style="list-style-type: none"> • Good expressiveness
<ul style="list-style-type: none"> • Persuasiveness
<ul style="list-style-type: none"> • Suitability for group work
<ul style="list-style-type: none"> • Diplomatic sense
<ul style="list-style-type: none"> • Skill and interest in moderating activities
<ul style="list-style-type: none"> • Willingness to continuous learning and further training

Hyvönen et al. (2008) further demonstrated that how technological advancements would affect the role. The authors implied that the role would require to extend its current practices for achieving organizational success. La Paz et al. (2020) explained the dynamics behind matching the role of the controller. The authors explained how the differences in expectations between the companies and controllers crafted the professional role. Underlying importance

of the hybrid perspective can be acknowledged here creating high performance expectations for the controllers, where the core practices of the role remain same as the past. Karlsson et al. (2019) illustrated how institutional factors generate the hybrid role within management accountants. The authors recognised management accountants' potential traits of acting as a business partner while performing traditional roles. As mentioned above, similar literature also suggested that the responsibilities of the role expanded but the main aspects of the job remain the same (Indjejikian and Matějka 2006; Graham et al. 2012).

However, Erhart et al. (2017) addressed the importance of the controller's role as a value-adding partner. It can also be recognized by observing the table above that the role itself is surrounded by several variances affecting the statement. However, three main controller types can be distinguished following the Henzler typology. The task of a traditional, accounting-oriented controller is to document, analyse, and use the data of the past. It does not provide services to other employees of the company (Erhart et al. 2017).

The future and the action-oriented controller complete administration decision-supporting actions centered at present and the future.. The individual's activity is focused on business events, thus helping the management to manage. A comprehensive approach to features is only rudimentary. The third type is the management and system-oriented controller, who participates in problem-solving processes and acts as an innovator. It represents a new role in response to the increased dynamics and complexity of the environment (Elbanna, 2009).

2.3 Managers and Controllers cooperation

The relationship between controlling and management is significant and is the key to practical cooperation. The controller is an assistant to the management, allowing the individual to manage the company in a goal-oriented way and adapt to environmental changes (Henttu-Aho, 2016). However, an individual should be aware of the imaginary boundary line that crosses the person's competence and becomes a victim of unauthorized interference. Lamber (2012) further demonstrates that the top management usually always makes the ultimate decision. The author implied that any related operational failure would befall the in-line supervisors, no matter how supportive or influential the controllers are. Top officials would hold managers as responsible for significant decisions, and therefore, there tends to be indifference in the controllers' expectations. Hence, affecting the managerial

perspective on the profession and creating a sense of difficulty for controllers in keeping up with the manager's expectation (Lamber 2012). Therefore, cooperation between the two parties resulting in a balanced outcome is vital for conducting day-to-day business.

The essence of the relationship is that controlling does not perform leadership tasks. It only indicates the problems and causes, but the decision and the intervention are already the management's task. Controlling serves ownership interests to exercise ownership functions and management as cost and profit management (Karlsson et al. 2019). It follows that controlling influences managerial expectations by affecting the functional openness or working culture, the interdisciplinary problem-solving method, integration, and coordination of activities. Delegating individuals with shared responsibilities or picturing controllers in a higher stance within management is substantial in affecting organizational performance (Zoni & Merchant, 2007; Elbanna, 2009). Integration and coordination are aimed to relate planning and accounting from a managerial perspective. It is a fundamental truth that planning without control is meaningless. Integration and coordination without an information system are hopeless. Therefore it is essential to understand the four aspects affecting the relationship between the two parties: planning; accounting; inspecting; and informatics (Lasyoud et al. 2018).

2.4 External Developments

2.4.1 Globalisation, supply chain and trends in sustainability practices

Scholars researching the internationalization of services had emerged with distinct results demonstrating direct relation with this paper's aim. It can be observed that globalization has substantial effects on business operations and companies, which are on the run to maintain its international competitive stance (Haralambides, 2017; Wolf et al. 2020). Kumar (2005) indicated that all business processes, especially finance operations, face complexity because of globalization. However, factors such as the firm's size, industry, operation method, and long-term goals determine the extent of the effects. Manufacturing companies apply the latest technologies or software for faster decision-making due to international competition. In order to stay ahead, business environments are changing and constantly adapting according to firm-wide strategic goals (Berger & Frey, 2016; Oesterreich et al. 2019). Yazdifar and Tsamenyi (2005) demonstrated how internal factors transform as business operations change.

According to La Paz (2020), the controller roles are always in competition to match with changes in environments, and that the same concept applies with the globalization of practices. According to Elbana (2009), controllers nowadays are more involved in organizational decision-making. Therefore, controllers' interests in a company's sustainability practices were further emphasized. The financial crisis in 2008 and 2010 promoted indifference in sustainability practices for companies in different economies. Depending on whether the firm operates in a developing or developed economy, companies will respond differently to sustainability practices and changing business environments (The Mckinsey Quarterly, 2009; Antoine-Marie, 2017; Bhimani, 2020).

The rapid developments around the globe will create more demand for using adequate modern supply chains for critical business operations. Consecutively, external developments put extra pressure on all professional roles to effectively implement modern supply chains, considering that all modern supply chains use an updated interface and technical platform. It establishes that updated tech is better for decision-making for all professionals related to supply chain management (Elms, 2013; Oesterreich et al. 2019).

2.4.2 Technology and big data

It is not surprising that technological advancements and extensive data analysis are related to globalization and modern supply chains. Accounting data is complex, and a vast amount of time is required in preparation and presentation (Berisha & Asllanaj, 2017). In order to better manage time and be efficient at decision-making, all large corporations are consistently trying to improve operations through extensive data analysis. The internet of things (IoT) is a potent factor shaping the behaviour of management. Most professions are leaping more towards business intelligence or machine learning because of the rapid developments in technology. The digitalization era is further demanding that all professional roles be tied with Information Technology to some extent. Hence, indicating that all roles developing more in a complex way (Ke, 2014; Berisha & Asllanaj 2017).

Information system

The information system of enterprises is diverse. It is because of the diversified activities; various internal and external information are required by enterprises. One essential and element of this is the controlling information system, which effectively supports the company's management system (Seal, 2001).

The controlling information system has two main tasks:

- gathering information for planning and plan-fact variance analysis (factual data)
- providing information to management for decision-making and operational implementation of interventions
- the coordinating role of the controlling information system appears in both information collection and information provision

In order to ensure the quality and efficiency of decisions, it is imperative to have the right amount, quality, and frequency of information at each hierarchical level. IT support is essential for the fast and efficient operation of the controlling information system. Properly structured controlling software supports and the collection of information, planning and plan-fact analysis, and provisions.

The controlling system cannot replace other information subsystems but builds on to different management areas. It must receive information from these subsystems for operational and strategic planning, plan-fact comparison, preparation of management decisions at different levels, and time. The quality of the information provided by these subsystems is crucial. If the information is not of adequate quality, the efficiency of the controlling system will decrease, and the performance of its function may become questionable.

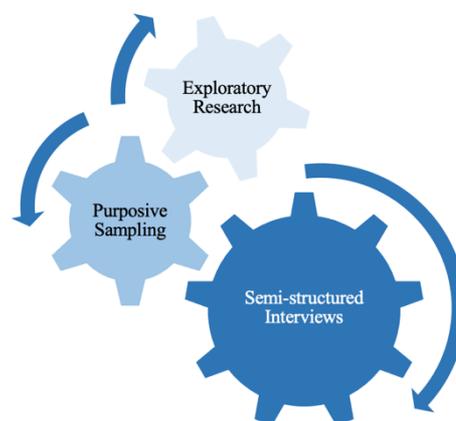
In divisional organizations, the only link is the controlling organization, which connects the board of directors with the divisions from the information side. Top management can track daily events through the controlling information system. In a globalizing world, companies are becoming increasingly international, which places new demands on ensuring the flow of information, making information comparable, and designing controlling reports for companies operating in different geographical areas and different economic environments (Seal, 2001).

3. Methodology

In the following section the case selection, data collection, data analysis and the final discussion of the methodology is presented. The foundation here is given by two academic research books written by Yin (2015) and Burns & Bush (2014) which can be found in the reference section too at the end of the report. The method is simple, convenient for the research topic and for the available resources of the study and the authors tried to keep a questioning mindset when selecting the right approach during the data collection and analysis.

The study has a research methodology which highly supports the coherent outcome of the data collection and data analysis. As the research is focused on the drivers of the controller profession's evolution (research question), qualitative data collection is being applied to receive some deep insights in this evolutionary process. In fact, this study may be categorized as exploratory research, since it is intended to gain background information about the general nature of the research problem. This method does not have a predetermined set of procedures when it comes to data collection and analysis, it may vary widely based on the knowledge and preference of the researcher, that is also why it is called "unstructured" (A. Burns, 2014). The research may be qualified as a case study because it analyses a current phenomenon in depth, within its real-world context, most of the time when the relation between the phenomenon and the context might not be plausible at first (Yin, 2018).

It carefully studies a "technically distinctive situation" containing many more fundamental and contextual factors than input points. It also includes a former construction of a theoretical framework to manage the research plan, data gathering, and examination. The consequence of the study is based on many sources of confirmation, with data shown in an appropriate fashion (Yin, 2018).



Within theory, already existing content shows proven concepts and facts in the study, new findings and propositions are being compared whether they support or contradict the already existing ones. It also has a revelatory feature even though research has been done on similar topics before, observations and analyses are made to bring up new concepts (Yin, 2018). Validity and reliability are academic standards that the research intends to take into consideration as much as possible. Validity is a must to ensure that the collected data is relevant to the research problem and it does not contain any subjectivity made by the researchers. Furthermore, identifying operational measures are crucial to strengthen the level of validity of the research. Reliability entails that documenting each step of the research that is fully based on existing ones to create a connection between new and older concepts. It is a general term which is about the right way of handling data, in order to have everything set up correctly in case someone external would look into the insights of the paper (Yin, 2018).

3.1 Case Selection

In terms of case selection, the study is focusing on two large-cap corporations which are present all over the world and several controllers are being employed with different experience and background. Hence, the case selection includes professional controllers and two business entities which are aligned with the research problem (Yin, 2018).

Regarding sampling, nonprobability sampling method is being used which is not built on chance or randomness, it is rather based on inevitably biased selection process to reduce the time and cost of the sampling technique. There might be some risk of having a nonrepresentative sample eventually with this type of sampling method, although the research intends to eliminate it as much as possible. Within the nonprobability method, purposive sampling is being used, the researchers used their judgement and knowledge to identify the right sample candidates. Purposive sampling may be described with terms like subjectivity and convenience, which may result in leaving out potential members of the sample as mentioned above. Sampling error is a phenomenon that is not possible to fully avoid when working with samples, each sampling method has sample frame error to some extent or complication due to the extent of the representation. In fact, a perfect data extraction was made from the whole population, a census (accounting of all population) would have to be created which in case of the study is impractical and not feasible (A. Burns, 2014).

All in all, the first three components of the research design are aligned well within the methodology, which are questions, propositions and cases. On the other hand, the case is expected to result in an outcome that reflects on existing rivals in order to further develop knowledge on the topic of how the role of controllers have been changing (Yin, 2018).

3.2 Data Collection

Position	Company	Location
Financial Controller (accounting)	H&M	Stockholm
Financial Controller (assortment)		
Business Controller (forecasting & KPIs)		
Business Controller (project management)	DB Schenker	

Four interviews were conducted during the data collection period, all of them with either business or financial controllers. The selection of the interviewees was done by personal preference, since the researchers had appropriate connections who could fulfil the requirements and give insights into the research topic. Three of them were done on the telephone and one was collected in a written form by sending out the interview question to one of the controllers due to a busy schedule. Initially, the interviewees were contacted via telephone and the actual interviews were made on mutually accepted appointments.

All the interviews were recorded, the four interviewees had been asked about this aspect in advance and finally they accepted it. Due to the global pandemic crisis that has been shaking the world recently, this type of qualitative data collection method is the most feasible as a consequence of researchers and members of the research are in different countries.

The interviews took around 45 minutes on average, conducted in a semi-structured way to give enough space for the interviewees to elaborate on the questions, therefore additional questions were posed besides the pre-set ones in order to receive more data during the data collection.

As a matter of fact, the interviewees acted professionally during the telephone calls, as all of them are personally close to the researchers it was subjectively ensured that their input would

be adequate and useful. In the beginning, a general introduction was done, mentioning their academic and professional background and afterwards all the questions were posed to the interviewees. Eventually, the recordings were changed by creating a written memo out of them and not all of the questions resulted in meaningful insights, therefore they were taken out for the data analysis to keep the data consistent. Please see the most important interview findings Appendix (1).

The pre-set questions were carefully worded, so that the researchers seemed to be uninformed about the topic, also they allowed the interviewee to provide some brand-new insights about it. In fact, additional sub-questions were asked during the interview, but it did not confuse or affect the information pattern of the interviewees (Yin, 2018). When adding extra questions, the researchers were cautious about not gathering data that has been mentioned multiple times and relying on them, therefore the data was intended to be free of bias (Yin, 2018). The personal perspective of the researchers did not unknowingly influence the data input; therefore, the end result was not either unknowingly changed, which was then interpreted throughout the research. As far as the researchers concerned, the interview result is not biased by them (Yin, 2018).

In terms of case study protocol which is offered by Yin (2015), the methodology of the study ensures that the researchers are targeted on the topic, it supports the anticipation of issues along the way. Firstly, the overview of the study is defined by mission, goals, audience etc before the actual data collection just like questions, hypotheses and propositions. Furthermore, before the data collection process, contacts and names had been collected including a prior preparation of topics and sub-questions to keep the interview interesting and meaningful for both parties in it. The interviewers tried to make the goal, practices and the importance of the research as clear as possible to the respondents to increase the quality of the interviews in advance. Moreover, the tentative outline of the report is also taken into consideration, the data collection supports the desired final result of having valuable, innovative research outcome. Even though, the research is not a case study, the protocol of Yin (2015) seemed to be a great tool to follow to increase the reliability of the data (Yin, 2018).

3.3 Discussion, Criticism of Methodology

Due to limited time frame and in order to be provide decisive insights, the study is conducted only in Sweden focusing on companies operating in a multinational context. It limits the paper's ability to demonstrate the world's general view as the research is country-specific. On the other hand, qualitative interviews represent personal views and beliefs, which might be biased case-specific-wise and further limiting the capability to include the views of the general population of Sweden. Moreover, studying distinct outcomes relevant to local vs. international accounting standards was excluded as this paper aims to produce a generalized outcome.

The findings of this paper intents to discuss the views of the controllers and recent studies to generalize developments in all industries of Sweden. Therefore, the capacity to generalize industry-specific analysis was overlooked. Furthermore, time delimitations limited the authors' plan to conduct a comprehensive study. It also limited the focus on developments related to the studies of specific roles such as the treasurers and accounting controllers. Instead, the research sub-questions exist to generate a generalized output of the controllers' role and changes. Secondary sources allowing generalizations of international concepts were further used to support interview results. As Yin (2015) suggests, the methodology is founded on constructed and internal validity, external validity and reliability to enhance the quality of the research outcome although the above-mentioned circumstances were inevitable to avoid in practice.

4. Empirical Data

In the following section a profound description of the data analysis provides the foundation of empirical content on the research topic, each of the main sections are tested against the study's theoretical input later on, in order to extract new findings additionally.

Firstly, in order to provide clearer overview of the results, all the relevant findings of the interviews are extracted into six main sub-themes. A summary of the main findings' "toolbox" is provided below. These are: connection between controllers and managers, modern supply chains with externalities that affect them, availability and the need of filtering data, business trends in sustainability, controller's task of being a bridge between financial, operational and managerial aspects by communicating to all kinds of stakeholders and the so-called hybrid nature of a controller job.

Empirical Toolbox of Controlling

Summary

Controllers and Managers

- Managerial Duties as Controllers
- Assistance of Decision Making
- Independence and Involvement

Globalization and Supply Chains

- Environment and Politics
- Agile Financial Approach
- Interdependence and Volatility

Technology and Big Data

- Big Data, Business Intelligence
- Data Filtering
- Systems' Implementation

Business Trends in Sustainability

- Indirect Effects on Controlling
- Economic Interests at First
- CSR and Integrated Ethics

Financial, Operational, Managerial Aspects

- Clash of People and Numbers
- Focus on Management Support
- Bridging Function

Hybrid Role

- Multi-Functionality
- Core of Controlling Stays Same
- Dynamic Business Requirements

4.1 Controllers and Managers

“the relationship between the controller and the manager is optimally based on elements of trust”

– Business Controller/ H&M

“he has capacity, a toolbox for economic analysis, and he also has the right information.”

– Business Controller/DB Schenker

This sub-topic was discussed with both financial and both business controllers equally detailed. As it was expressed by a business controller of H&M from Stockholm, a crucial duty of controllers towards managers is to make processes transparent, that is, to make clear for the manager which product is the most effective. It ensures the constant development, day-to-day operation of the planning, control and information systems. The ultimate choice making is primarily the accountability of the management. The preparation of its parts and features is the controller's responsibility, who may serve as a business consultant, moderator, analyst, discussion partner, alternative proposer, and colleague. The interviewees mentioned that controllers are multi-functioning partners who engage in monitoring, urging, initiating, catalysing, being a conflict partner, being convenient and responsible for the goals to be achieved.

“The relationship between the controller and the manager is optimally based on elements of trust” – said the business controller of H&M. It is the case because of the common successes and failures, as well as the knowledge and the information possessed by both parties, they can mutually judge and evaluate each other's work, which is a mutually reflective situation, therefore trust is extremely important. Because of the vast amount of confident data that is open to the controller, it is especially important for a trusted, loyal professional to work in this position along with management. In order to have a successfully operating internal control system, the business usually requires a close cooperation between the managers and the controllers. The management accounting function commonly includes a specific type of discrete controlling managerial behavior as the financial controllers expressed it. By having the management accountants resembling operational managers, main decision-makers make sure that administrators take full accountability for trading success or even collapse and are presented to the smallest amount of uncertainty to guarantee optimal responsiveness.

Almost all of the respondents mentioned somewhat the distinction that the leader plans, decides, takes action, instructs, checks, while the controller provides information, prepares and analyses decisions. Traditionally speaking, the controller should assist the manager in acquiring the knowledge necessary to run the business. One of the financial controllers mentioned, that the actual tasks of the controller are highly defined by the size of the firm and a separate controller position usually only appears above a certain company size, in smaller businesses, this task is usually performed by the chief financial officer or chief accountant.

The controller is traditionally expected to be an expert in budgeting and costing.

“He has capacity, a toolbox for economic analysis, and he also has the right information.” – expressed the business controller of DB Schenker. In addition, as it was confirmed by all business controllers, that a chief accountant for example, usually thinks differently than a controller because she must have the accuracy, the facts, the past, which gives its main direction to its tasks, while the controller is more future-oriented and has to think in larger volumes, it cannot get lost in the details. It has been collectively said that in large companies, an extensive controlling organization is usually formed, where controllers occupy their tasks as specialists, and in small and medium-sized companies they work in several functions. The manager “drives the business” is responsible for the results. The controller provides the necessary tools and information and is responsible for the transparency of the results.

4.2 Globalization and Modern Supply Chains

“controllers must become more aware of the rapidly changing world with its new trends.”
– Financial Controller/H&M

“thinking in terms of global markets rather than locally has a huge effect on controller’s jobs”
– Business Controller/H&M

“Controllers must become more aware of the rapidly changing world with its new trends.” – said a financial controller of H&M. The external environment is constantly changing, so if the company wants to remain successful for a long time, it needs a dynamically capable controlling system, one that is suitable to fit in the future environment, which with its special tools contribute to the company's current work-flow. External environmental conditions,

environmental changes and the need to adapt to them have a huge effect on the controlling system of the company.

The task of the supply chain is to deliver materials efficiently and effectively from suppliers to end users along an integrated, information, evaluation, reward system between organizations, in which the sharing of risk, experience and common goal ensures coordinated operation. The supply chain can deliver the greatest value creation and competitive advantage if it succeeds in aligning knowledge, skills and abilities for a common goal through mechanisms that serve efficiency and effectiveness - customers in the narrower sense, the community in the broadest sense (for instance environmental performance). This line of reasoning serves as the basis for the need of effective supply chain controlling.

Large amounts of often changing data sets need to be managed in the dumping of information that encompasses the world in order to reap the benefits of their value. “Thinking in terms of global markets rather than locally has a huge effect on controller’s jobs.” – said a business controller. All this is further intensified when it comes to the cooperation of several companies. However, its toolkit is based on a flexible and comprehensive database that provides basic information about “costing, product calculation, profit and loss calculation and being supplemented with enhanced market and strategic information.”

According to the financial controllers, classical controlling focuses on the actual control of a company, the subject of the research also examines the logistics processes of activities across businesses. Furthermore, they expressed that the financial controlling approach can be the “starting point”, as supply chain management is primarily a set of financial planning, operational management, control and information provision activities in line with the company's strategic goals and organization.

However, the business controller of H&M mentioned that he has been closely working related to supply chain matters because of the purchasing department he is in, therefore the statement whether “controllers must be more agile today” relates only to financial or all kinds of controllers is a debatable question.

4.3 Technology and Big Data

“the controller role is much more about big data and the power of business intelligence is outstanding in the change process”

– Business Controller/DB Schenker

“it has become a much more high-paced job.”

-Financial Controller/ H&M

This part of the data collection is built up by all respondents’ opinions and thoughts since all of them happen to engage with technology at work to some extent. “The controller role is much more about big data and the power of business intelligence is outstanding in the change process” – mentioned the business controller of DB Schenker.

Apparently, one of the key questions in controlling is who (which area) owns and manages corporate data assets within the company in the future. The data input confirmed, that in the age of Big Data and Internet of Things (IoT), this will become increasingly important, and special knowledge and expertise is required to exploit the potential of corporate data assets.

The financial controllers of H&M said, that new technologies are fundamentally changing the profession, “industry 4.0” or also known as digital transformation is taking place.

This change will bring fundamental changes in the corporate world, leading to the introduction of new technologies. Those responsible for preparing the reports are said to be urged by shorter and shorter deadlines, in addition to which the production and analysis of increasingly complex and structured data is expected, thus changing the corporate role of controlling. “It has become a much more high-paced job.”

All this requires companies to invest in information technology, as their operations are based on this. The business controller of DB Schenker said that the use of the integrated corporate governance applications makes the work of controlling significantly easier in terms of both time and data quality production. Apparently, many companies still use manually maintained Excel spreadsheets and 30 self-programmed databases as their controlling system, but nowadays these solutions are not the optimal solutions in terms of time management or data quality. The business controller of H&M noted that “an essential task of a modern-day controller is data filtering”.

The interviews revealed that optimized IT workflows and efficient time management are important keys to the controlling field, which will be a decisive competitive factor for all companies in the future, as controllers have to cope with ever-increasing amounts of data from both internal and external areas. Also, the market requires companies to behave faster and more flexibly, but also for the company to be innovative and efficient, conserving natural resources and participating in social responsibility.

4.4 Business Trends in Sustainability

“Corporate sustainability shapes the role of business controllers the most.”

–Business Controller/H&M.

The fourth sub-topic was only discussed with the business controller of H&M in a detailed fashion, although the two financial controllers gave interesting insights as well.

“Corporate sustainability shapes the role of business controllers the most.” – said the business controller of H&M. Corporate sustainability can be further strengthened by the multiplier effect of perceived positive phenomena. Apparently, the global but to some extent domestic trend of more and more companies and industries recovering from the crisis and returning to growth may contribute to this. According to company leaders, the situation of corporate sustainability is strongly related to the economic situation.

In fact, both of the financial controllers somewhat referred to the fact that in those countries, industries and segments where economic recovery is still to come, or even existential problems are characteristic - both local and international - it can be observed that daily economic interests may override sustainability aspects and development plans.

According to them, this is also why many people may feel that individual (often ad hoc) good practices, which are in themselves extremely forward-looking, do not bring results at the level of society as a whole, and so there is no breakthrough in improving sustainability performance. Throughout the interviews the business controller of H&M went deeper into this topic and by giving examples of his own he made it clear that sustainability has been affecting his job vastly. Meanwhile, the two financial controllers touched upon this matter but they did not approve that there is a clear link between the controlling role and sustainability, they noted that globally it is an important topic but their job is not too related to it.

This may arise the question whether sustainability aspects must be directly integrated into the business strategy or not.

4.5 Financial, Operational, Managerial Aspects

“on one hand, a controller can only meet high expectations if he maintains a good collegial relationship with employees from whom he collects data and information. On the other hand, the management often has an expectation towards the controllers that, almost as an alone wolf, leaving behind human factors and human needs, they really control the workers in the technical fields.”

-Financial Controller/H&M

“controllers are not biorobots, they also need good colleagues in the organization from a human point of view, as it is basically good to work in a team, and on the other hand because they can meet the expectations of their job.”

-Business Controller/DB Schenker

As it was expressed by multiple interviewees, controllers can only perform their tasks if they can rely on the data, plans and information of their technical colleagues. Regarding this, a financial controller of H&M seemed to feel a contrast, because “on one hand, a controller can only meet high expectations if he maintains a good collegial relationship with employees from whom he collects data and information. On the other hand, the management often has an expectation towards the controllers that, almost as an alone wolf, leaving behind human factors and human needs, they really control the workers in the technical fields.”

Even though a financial controller had an opposing opinion of the crucial and well-functioning multi-functional aspect of controlling, the two business controllers summarized the opposite pole, meaning that it is a very important factor for a well-functioning controlling system to be able to find a balance, working together in good order along common interests and finding the satisfaction and corporate esteem collectively in the system.

Therefore, management has a great responsibility in this, as they have to recognize these processes, accept that there are human factors as well. The interviewee from DB Schenker noted that “Controllers are not biorobots, they also need good colleagues in the organization

from a human point of view, as it is basically good to work in a team, and on the other hand because they can meet the expectations of their job.”

Being a bridge between financial, operational and managerial aspects requires an appropriate controller who has the same vision, corporate interests in mind to a great extent, and who can easily decide what information is absolutely necessary to disclose to management.

At the same time, all interviewees expressed to some extent that they must be sufficiently flexible and not rushing to the management with everything that may arise a question and knowing exactly when and how to interact with management.

According to theory and interviewees as well, the main task of the controller is to provide extensive support to the management using its existing tools, and to provide information and advice that meets the needs, as well as to further develop the controlling tools and methods. These aspects overlap and match between the research findings and existing theory.

All in all, all of the respondents admitted that controlling has become more diverse in terms of tasks and responsibilities even though the financial controllers would stick more to the traditional role concept. The information of the data collection suggested that operational tasks are definitely required from modern controllers just like managerial, although managerial factors tend to be more of a “grey area” since there is a huge diversity in terms of managerial expectations and controller job descriptions and of course company size and profile. The raw data had some useful insights to be added to existing literature but mostly it confirms theory regarding the new aspects of the study.

4.6 Hybrid Role

“the role is definitely becoming a hybrid one”

-Business Controller/H&M

“nowadays besides accounting you have to be a good people person and be more creative so the role is becoming a hybrid role for sure”.

-Business Controller/DB Schenker

“integration of goals and plans, the management of the controlling process, coordination, the development of data quality and the reporting system.”

-Financial Controller/H&M

Just like the previous sub-topic, the last one is also a popular in terms of discussion with the interviewees since it takes up a reasonable part of the research questions, even though the input of the interviews is quiet widely interpretable. Controlling is a branch of management science, whose task is to explore management problems within the organization and to find solutions to these problems together with the manager, thus increasing the efficiency of operation. The task of controlling is to provide management with up-to-date information. However, as it was already mentioned before, this information needs to be filtered, properly structured and evaluated. It can be the most suitable choice for management to respond quickly and flexibly to market changes. Regarding the interpretation of controlling, the business controller of H&M said that “the role is definitely becoming a hybrid one” or the business controller of DB Schenker also confirmed, “nowadays besides accounting you have to be a good people person and be more creative so the role is becoming a hybrid role for sure”.

By the term “controlling” one may mean the cooperation between the management and the controller by encompassing the entire process of goal setting, planning and control for the core business and management processes. According to all respondents it may include activities such as decision-making, interpretation and regulation.

In order to continuously increase organizational performance management, the main functions of the controller are the “integration of goals and plans, the management of the controlling process, coordination, the development of data quality and the reporting system.”

Therefore, the controller was said to be the business partner whose task is to proactively support management to achieve corporate goals.

Obviously, when it comes to having a "hybrid role", it might be testing to understand what this term indicates. There is no detailed description of it in the meaning of the developing role of the controller position. However, all the interviewees agreed that specific duties were not necessarily asked or required from the professional a few decades ago. Nowadays, it is a plausible fact that if one is determined to be a controller, it is not only about crunching figures. During the data collection process everyone had an aligned opinion on this matter to some extent, even though because of the difficult interpretation of "hybrid", there were no exact matches in terms of data input but references to their interpretation and opinions.

5. Analysis

This section of the thesis will use theories presented in chapter 2 to provide different arguments contributing to the paper's aim as well as engage in comparison with previous studies. The empirical findings will be evaluated according to the 6 sub-headings identified in chapter 4. The final part of this section will provide an overview of the most relevant sources and its impact on this paper's results.

5.1 Managers and controllers

According to Lambert and Sponem (2012), operational managers are reluctant to delegate responsibilities when the task is strategic. The author further reflected upon the managers' hesitant character of sharing insufficient information when top officials prioritize management accountants. The majority of the interviewees disregarded the hesitant characteristic of managers by implying that the working culture is so dynamic and open in modern practices, which makes it difficult for any individual to show an act of denial. One of the interviewees emphasized the importance of team building working-culture in Sweden where decision-making authority, trust, and support of group decisions were highly prioritized.

Therefore, it can be understood that if a manager is reluctant to share sufficient information with controllers, the motive behind it could be to safeguard firm-wide interests or team-based

goals. However, one respondent's answer contradicts others as the controller agreed that it is a manager's job to respond and answer important stakeholder calls. Allowing a subordinate to represent a managerial task might undermine the morale of the supervisor and hence, explain the motive behind the hesitant character. Extracting more from the transcript outcomes, it is increasingly important for managers and controllers to have a precise level of understanding built on trust and support. Weak cooperation would undermine the working capacities of both parties.

Zoni and Merchant, (2007) demonstrate that controllers are more productive when the role is provided with a great sense of shared responsibility. Likewise, Seal (2001) commented on the growing relationship between managers and controllers. Where controllers' actions must represent pure support to their immediate supervisors, anything more or anything less can disrupt the flow of services between the managers and controllers. At the same time, the interview results accept the importance of controllers' potentiality to provide assistance in decision-making for managers. Contrasting reviews were also evident in the findings where independence and involvement issues can be drawn to elaborate on this aspect. Two respondents considered that a sense of freedom and involvement in collaboration with line managers is vital for optimal performance. Others accepted that the scope of the controller's duties is limited to the directives provided by the manager. In other words, it matches with the traditional ideology where a controller only focuses on assisting the decision-making process of the manager.

An internal factor which can play a significant role in shaping both parties is the working culture of a company. The empirical data extends the idea of building the most efficient corporate culture identified and agreed by all of the respondents. Even though all the interviewees agreed on the potent factor, the individuals represented different opinions. The majority mentioned that it entirely depends on the manager's ability to accept and welcome shared responsibility and whether the top officials can convey a strong corporate culture that dismisses all potential errors. However, one respondent showed that everything has to work as a two-way channel. Otherwise, no matter how intense the corporate culture is, the system will eventually fail.

The way the corporation sets goals and conducts business processes can serve as an essential service function to support the management decisions. Therefore, it is a potential internal

factor. Our findings from the interviews posit views where importance was relevant to making the controllers' service process as efficient as possible. However, the results also made minor references to the top officials' influence in shaping the role of the controller. Instead, respondents suggested that it is more critical on how the managers plan to conduct duties given the daily interactions between them. One respondent had an interesting view as the controller said that top officials merely act as the manager of a football team while the captain and its players play the ball. To some extent it can be agreed but more views need to be drawn for a concluding statement. Nevertheless, the general idea that needs to be drawn here is that corporation officials should set goals and support functions to allow controllers to understand what is precisely required of them. It depends on the personal traits of each controllers on which ideology of service the individual will follow, which means that controllers' actions be apparent and precise to fit the needs of the line managers to avoid clashes. It was also partially agreed that managers always make significant decisions, so the controllers are supposedly there to expand their roles to assist the decision-making authority of the managers. Contrasting views suggested that controllers provide more first-hand data, and therefore, some delegations will be highly appreciated. Reflecting on Elbanna's (2009) comment, it was also agreed that actions are more influential when the managers integrate controllers' suggestions into decision-making.

Additionally, Lamber (2012) mentioned that controllers face significant challenges with fulfilling the requirements demanded by managers. As a result, in operations and strategic management, the consideration of aligning and changing the controller's role in the pursuit of fitting the exact needs of the manager is still evident. The findings further confirm the preceding statement. All controllers spend a lot of time and effort to illustrate their respective responsiveness to gain trust and achieve shared success.

However, a contradictory statement can also be identified, resembling that the top officials always pick managers to make the significant decisions and at times disregard valuable inputs made by controllers. It fits in line with the five criteria of mindset for controlling and directing operations from a managerial position mentioned by Lambert and Sponem, (2012). Managers are there to ensure the functionality of operations and smooth decision-making between business processes. The research results further demonstrate that the respondents agree that top management would like to minimize risks and sometimes make tough decisions. Some contradictory statements were present where interviewees also mentioned that too much control would dismiss innovative ideas from the controller's perspective.

According to our findings, at least three respondents consistently expressed that they are expected to have the proper knowledge and skills for supporting managers efficiently right from the start. The other financial controller shared a contrasting view where the management expects controllers to see accounting systems primarily in technical innovations instead of administrative duties. As previously mentioned, these management approximations fall in line with studies where authors expanded on the significance of the controller position in shaping corporate practices (Zoni & Merchant, 2007; Hyvönen et al. 2008; Erhart et al. 2017;).

Controllers (management accountants) may 'have an income statement in mind' on the daily basis, although ideally, they are aware of the fact that it is not 'cost effective', in terms of time and money, to track costs constantly as it is expected and supervised by certain managers. There is usually a limited authority given to the management accounting employees with unlimited responsibility in many cases, although risk-taking is more for the operational managers (Lamber, 2012). Academic study has provided some evidence of so called "strong controllers" who succeeded to achieve a great balance between independence (needed for compliance and traditional controlling) and involvement (needed for managerial roles) fairly well (Graham et al. 2012)

According to the interviewees to reach a "strong" quality, one must have adequate experience and skills. On the other hand, there has been findings summed up of "strong managers", who combined a deep knowledge of their information needs with a tough, perhaps sometimes aggressive style of management to make sure those needs were satisfied. Another type of "weaker managers" were seen to be intolerant to information deficit, which they would attribute either to their own lack of financial knowledge or the inflexibility of the management accountant (controller) (Pierce, 2003).

5.2 Globalization and Modern Supply Chains

Nowadays, the growing internationalization of services is on an entirely different level (Haralambides, 2017). These developments were further mentioned by Wolf et al. (2020), where the authors suggested companies either make use of the external environment to gain a

competitive advantage or suffer substantial losses by avoiding. Drawing from the empirical data, it supports the above statements as three out of four controllers agreed to the significance of the external and internal factors. However, one of the controllers suggested that there are always other ways to overcome losses and, therefore, disregard the changes in the external environment. The controller built an argument based on incurred losses through losing overall control due to globalizing operations. Reflecting on most positive decisions, external conditions play a significant role in gaining a competitive advantage. Another important factor related to political developments was led by one of the discussants. As political developments severely affect local trade and conditions, it can be understood that it is vital for any multinational company to predict situations before commencing an operation in another country. This study is focused on an international context; globalization tends to be an increasingly important concern. Therefore, it can be confirmed that multinational companies must be aware of the rapid developments taking place globally to remain successful. Furthermore, thus affecting both management and the role of controllers.

Sequentially, these remarks on globalization positively impact Hyvönen et al. (2008) findings. The authors made concluding remarks on the controlling concept by drawing on the importance of understanding the company's unique internal and external factors. Moreover, all five criteria (Future; Goal; Congestion; Cost; Decision) orientations can be related to globalization (Lambert & Sponem, 2012). According to the results, if a company is well aware of its external environment, it can quickly adjust its internal environment to respond to external developments. Companies that can respond fast indicate successful implementation of the five criteria for controlling. Two interviewees' results suggested that companies that can adapt fast require an agile financial approach—hinting that this not only affects the role of financial controllers but anyone related to finance. Therefore, it can be drawn from their statements that the agile financial approach is one requirement for companies looking for fast adaptations to the changing environment. However, results indicated that a dynamic approach is subtle enough to run operations considering the latter two responses. Both results suggest developments to the role of controllers. As the change of operations usually starts with financial planning, the controllers play a crucial role. However, poor maintenance of the criteria indicates undermined strategic and operational controlling attempts from firms, eventually leading to a failure (Lasyoud et al. 2018).

Global value chains have evolved due to the geographical diversification of the manufacturing of goods and services. It is primarily due to increased cross-border interdependences and vast mobility of goods and services. Consecutively, multinational companies use and implement the latest technology or modern IT system to manage big data (Seal 2001). The empirical data illustrates that global businesses involve complex products, operations, resources, technology, intellectual property, and work force. At least three discussants stressed the importance of the use of modern applications to stay ahead of complexities. One of the interviewees from H&M suggested that modern applications allow to pinpoint the current location of shipments worldwide and support early weather forecasts. Tracking the weather will allow the controller to understand whether a natural disaster will take place and hamper the distribution of supplies or not. This statement can further confirm that the use of modern-day technology allows room for better decision-making. Besides, globalization and modern supply chains promoted this paper's research objective (Elms, 2013).

It can be interpreted that the operational and the controlling scope is subjected to change from the primary process when the company intends to respond to changes (Berisha, 2017). As a result, the value chains are updated, and more functionality is expected from the controllers. Making the role more volatile in an international competitive context. The research considers it essential to emphasize that there is a natural synergy between controlling and corporate and network-level strategy in this area. However, the neutral response is also evidence indicating an extended debate on determining whether all controllers' role is agile/dynamic or not.

One of the most critical conditions for the operation of supply chain controlling is financial plans. The majority of the respondents agreed by arguing that one of the essential tasks of the supply chain is to prepare financial plans in line with strategic objectives, ensure proper implementation, evaluate and control the company's financial performance.

The other reviews argue that financial planning is not the most crucial factor as it is a significant concern of operations management. Even though the financial plans can be of interest to the controllers, it can be judged from the statement that the extent of the controller function's involvement can vary department-wise, company-size, and industry-wise. The research considers it essential to emphasize a natural synergy between controlling and corporate and network-level strategy in this area. However, neutral response is also evidence

indicating an extended debate on determining whether all controllers' roles are agile, dynamic, or more complex (Berisha, 2017; Oesterreich et al. 2019).

The second sub-topic was mostly elaborated on by the business controller of H&M, although briefly was discussed with the rest of the interviewees too. The external environment is a gift, a framework condition for the company, which the company can hardly or not influence at all. However, in order to operate successfully, it must constantly adapt to these conditions, take advantage of the favourable opportunities provided by the external environment and avoid the dangers threatening the activities and existence of the enterprise (Wolf et al, 2020). One of the major effects of globalization is increased cross-border interdependences and vaster mobility of goods and services. Three variables may illustrate the phenomenon of this mobility. Firstly, free trade, the fall of national borders, progress in transportation, IT, expanded media, and commercials have affected a remarkable mixture of cultures and consumption behaviors. They are resulting in large international markets and intense competition. As a consequence of economies of scale in maritime transit, long journeys displayed no concern anymore. The planet has become more miniature on the map of a regular smartphone. Secondly, most governments support the fact that economic combination, lined up by the globalization of capital markets and the withdrawal of currency controls, provides a more effective resource allocation. Therefore it enhances growth and economic prosperity. Thirdly, the outstanding developments in transport and communications technologies did strengthen the speed and efficacy of international transport and reduce communication expenses. These improvements have decreased the barriers of both time and distance and give the picture of a “shrinking world” (Haralambides, 2017).

5.3 Technology and Big Data

Nowadays, decision-making via big data and analysis draws the centre of attention when it comes to business decision-making. In the period of large data also the internet of things (IoT), financial functions such as business deals, projections, records, accounting, mode, and management have been developed towards an unprecedented level (Ke, 2014). Processing accounting data and extracting financial information widely from one platform allows companies to improve decision-making ability, financial management function, reduce capital cost, and incur better profits. Likewise, all of the respondents agreed that the current

financial functions of business processes are going under a transformation due to profound changes in technology. While some interviewees regarded the optimistic views related to self-development, others supported the statement but reflected upon its negative qualities.

Three out of four respondents discussed the importance of the use of technology to remain successful. The comments indicated the need for modern-day controllers to think outside the box using updated software IT applications. In other words, develop potentiality in handling master data or extensive data analysis. All interviewees have confirmed that the technology will change the controlling scope of every company. This statement supports Berisha's (2017) findings, and it can be drawn that the primary process and the subsystems of control will be more based on modern software applications. Creating extra demand on the role of controllers. Most of the controllers' expanding role is appreciated, but, as stated above, one result expressed the amount of extra burden it brings on the profession.

Generally, financial data processing is comparatively tricky since it requires more than one clarification that connects multiple established and new technologies (Ke, 2014). Some firms may perceive some data to be complex and challenging to interpret. As the current study has summarized, the interviewees mentioned the changing role and that gathering and filtering data is a crucial task for controllers in the era of big data. This aspect has been extensively elaborated on in existing literature (Graham et al. 2012).

Two controllers reflected the vitality of data filtering with the use of business intelligence software. Two other comments on this aspect were more highlighted towards management's ability for adequate system implementation. The statement on the data filtering can be tied to the increasing demand of using business intelligence software as mentioned above. Furthermore, it can be used to confirm that rapid changes in technology directly correlates with the profession. The other two comments highlighted the managerial position, creating a relation with Lasyoud's et al. (2018) four pillars of controlling. Suggesting that the management scope of controlling is changing because of the digitalization era. And suppose a sustaining system of control is not implemented by management. In that case, it may result in unavoidable opportunity cost disrupting the flow of service, and as a final result, it will affect the role of a controller.

Relatively, Lambert and Sponem (2012) stressed that accounting and big data could be defined by volume, velocity, variety, and value. The author further implied that management

that understands the dynamics of the definitions mentioned above could stay ahead in financial management in an international competitive context. Similarly, the interviewees referred to have optimized IT workflows and effective time management as essential success factors for managing big data. What can be interpreted here is that the controlling financial approach of any company is subjected to change and adapt as new technologies are introduced. For example, a company has to think about future developments in the IT sector and set strategic goals not to lag (future orientation). This compliance action to the future creates a possibility to determine the developing role of the management accountant. However, arguments can be elaborated on contrasting responses, such as discussants relying on the importance of managing things. Implying that just applying new software to the current business system will not be beneficial if managers do not know how to use it. In this case, management competencies must be higher than those of the controller to make time-efficient decisions.

Relatively, companies can identify the pros and cons of its current process before moving forward with new technology (congestion orientation) or develop efficient cost-minimizing strategies by analysing big data (cost orientation) (Lambert & Sponem, 2012). Our empirical data supports that mostly all business controllers are familiar with using business intelligence for managing big data. Backed up by all the respondents' comments. It can be interpreted that the developments of the external environment, or in other words, rapid technological developments directly related to the controlling profession. As it leaps more towards business analyst characteristics added over to traditional functions minimizing the number-crunching ideology (Zoni & Merchant, 2007; Erhart et al. 2017).

Today, the leading technologies for digital transformation include social media or cloud-based applications (Lasyoud et al. 2018). Creating more demand on controller's function. With these technologies, the "modern customer" is available anywhere, anytime, is always online, and considers transparency, service, and quality important. It can be argued that modern technologies are forcing companies to refurbish current business models. However, it also posits a threat to traditional business models and reshaping the role of a controller. As previously mentioned, this fall is in line with Berisha and Asllanaj (2017) as changes in technology can be considered one of the most potent factors of the external environment affecting the scope of control, business, and the controller's role.

Big data is nothing more than the huge amount of data that companies, smart data networks, private sectors and individual users produce on a daily basis worldwide.

The digital population produces 2.5 exabits of data, which is a huge amount of data. Properly collected, processed, and analysed Big data in addition to their internal data set, can help companies understand the behaviour and response of the external market.

The three main characteristics of Big data are volume, velocity, and variety. Speed is important because data always needs to be processed in real time, diversity because data needs to be structured and correlated, and variety because data comes from different sources, but they need to be able to handle them (Lambert & Sponem, 2012).

Cloud-based computing is essential to Big Data because the huge amount of data that Big data covers can only be stored on a cloud basis. Companies can only reap the benefits of Big data if they trust their data and gain measurable value from their analysis. In addition, the interviews revealed that companies need data experts who recognize the value of the data and thus offer them economic benefits. Nowadays, in more advanced companies, the task of the controller requires a lot of data processing tasks. Such is the case with data preparation and spreading, so there is little time for analysis and recommendations to support the decision. Looking to the future, controlling processes are at risk due to increasing amounts of data, as their processing would take additional time away from analysis and decision support tasks. From this point of view, it is worthwhile for companies to introduce self-service controlling over time, like management reports and data analyses produced in a self-service way (O'Grady, 2016).

A well-processed and maintained budget information management platform usually is essential at financial departments because of three main reasons: making scientific management objectives, decomposing objectives scientifically and achieving managers' business objectives through making and analysing budget. Data handling systems are intended to create models and finally analyse, decompose, and transfer goals scientifically based on managers' business objectives. Eventually, after gathering the actual data, controllers proceed the budget report by comparing budget with current data (Ke, 2014). To be able to process huge amount of data, businesses will need well trained, experienced workforce which would work with large sets of information. Knowing ERP systems and having knowledge in IT tools was mentioned several times as a huge asset by the controller interviewees as well during the interviews.

As a result of the big data boom, McKinsey's own research announced that there will be a lack of people who have analytical knowledge, who are sort of analysts of big data analytics and decision-making. Being familiar with latest technology (BI and big data) and certain IT tools was said to be essential for controllers during the data collection period.

Moreover, another recent research of BCG group elaborated on the need for a brand-new type of profession, the "industrial data scientist", who would be required to prepare data, analyse and apply it (Oesterrich et al. 2019).

5.4 Business Trends in Sustainability

It can be observed from the findings that sustainability trends in businesses can substantially affect the changing role of a controller. Positive views suggest that large companies that had already passed its introductory phase of service should be more sustainable in business practices. Allowing controllers to feel secured and have a sense of feeling that management is performative. In this case, it can be noted that management's cooperation was highlighted again, and interpersonal relationship between the two parties was given of equal importance. However, opposing views are also present to make a difference. The discussants expressed that promises made by the management should be followed not only to demonstrate public relations but also to maintain efficiency internally. A generalized ideology can be realized here where it can be interpreted that, if an employee understands that equal-value is not given nor followed by the management to reach its own pre-set goals. Indirect effects of controlling comprising adverse events may result. From a theoretical perspective, the five controlling criteria can be elaborated (Lambert & Sponem, 2012). If a corporation has strong sustainability practices attributed to its business strategy, it would generally consist of a robust controlling scope from the top. It might render the controller profession stricter.

Moreover, as Seal (2001) mentioned, both strategic and operational controlling would reflect sustainability practices throughout the firm. It can be interpreted that it would create additional demands on the professional traits of the controllers. Controllers would generally be more responsive to changing patterns or have controlled behavioural practices where mistakes are not accepted in the working culture. Some respondents even mentioned that too strong of a controlling culture or practice derails productive output from controllers.

According to the empirical findings, at some point during a business process, there might arrive a situation where the top management's strong economic intent may override the trend in sustainability practices. This can be blamed for developing economies' recovery process from local or global crises, as illustrated in results. Furthermore, as a result, it will cause differences in the coordination of management practices and affect the controllers' profession. Therefore, it can be elaborated that some companies' goal orientation in developing economies can be survivability aided with maximum profitability, disregarding the importance of long-term sustainable growth (O'Grady et al. 2016).

As a result, the ideology of the business practice shifts to survival via maximum profitability, while sustainability can be a long-term project lurking in the background. It can be interpreted that even the controller consists of the right traits for the maintenance of sustainability practices, the individual will be reluctant to make an effort to do so. Companies try to convey a sense of sustainability, but initial efforts are diverted because of the economic intent. This misleading possibility was mentioned above and is further confirmed by the interviewees. In this case, Lambert and Sponem, (2012) five criteria of controlling concepts will be undermined as it can be understood that the goal and future orientation of the company can be deceitful. It is causing the performance of the controller not to operate at the maximum capacity.

However, some neutral responses allowed room for future debate on whether to integrate sustainability practices into business strategies or not). As respondents' answers also indicated that business trends in sustainability are irrelevant when it comes to factors affecting a controller's role. No matter how large the company value chain is, it can be realized that to maintain smooth coordination between the management and controllers, trust plays a crucial role. Once trust is established between the two parties, it will be naturally expected that both parties will sustain and mine the controlling scope of the top officials. As a result, the corporate practices may respond positively to the five criteria and positively affect the practices of a controller (Lambert & Sponem, 2012). However, if sustainability can be integrated into the business strategy, the results can be positive for the organization as a whole (Schlegelmich et al. 2003).

5.5 Financial, Operational, Managerial Aspects

As already mentioned above, the cooperation trait of the controllers with the co-departments of the company/organization is essential. Both positive views, as well as negative statements, are present in this case. Positive aspects reflect that interviewees accept that management must pursue a balanced controlling regime where feedback and suggestions are welcome. It will invite all employees, especially controllers, to engage themselves in discussions in critical decision-making. However, contrasting statements suggest that both parties should have a natural soft skill of interpersonal sensitivity. Without proper cooperation between the two parties, there are potential possibilities for a clash. This finding falls in line with Henttuaho (2016), who further stressed the importance of the relationship between the controller and management.

Pulling more from the data, it is primary for controllers to function as a proper support to fit the management needs where changes in a controller's professional traits can be subject. This similar managerial expectation is consistent even though the extent cannot be entirely determined without a given scenario. Instead, it gives the possibility to be interpreted that the management naturally expects high performance to be delivered from the controllers. Besides, for instance, it tends to shape the character and skill required by a controller, confirmed from the interviews, where personality and professional requirement plays a vital role in matching the approximation of the management control (Zoni & Merchant, 2007; Erhart et al. 2017).

Moreover, results suggest that controllers' roles can be considered equal to a manager's tasks, as the role acts as a bridge between important stakeholders and the management. Indicating that the role has more responsibility than traditional ones. One of the interviewees accepted and stressed that the controller's 'bridge' role would increase in due time. Another respondent suggested that all the work is done by the controllers and managers merely pretend to be the 'guard at both ends of the bridge'. Hence, affecting performance and making things difficult for a controller. Two comments had similarities in this aspect, reflecting that controllers are expected to have excellent communication skills within a company and disregarded the comment on equal tasks as the managers. Rendering from the results, it can be surmised that controllers need to act as a significant communicator and work centrally while assisting the management. It provides room to further interpretation that these actions fall into both second

and third types of controller. The first is more future-action orientated, and the latter management-system orientated controller roles diminish the traditional isolated role (Erhart et al. 2009).

The cooperation of the controllers and especially the technical areas is a delicate and critical issue. It directly affects the efficiency of the corporate controlling system. As mentioned above, without good cooperation, the controlling system is likely to fail. Therefore, it can be inferred that firm-wide culture and communication play an important role, where the management's responsibility in this issue is (also) decisive in shaping controller roles. It is essential to steer clear that too much goal and congestion controlling approach would negatively affect the overall concept of controlling from a managerial perspective (O'Grady et al. 2016; Kastberg et al. 2016). Controllers can also see it as an investigative approach of the company, with an interest in uncovering as many errors as possible, thus negatively affecting the professional traits of the controllers.

In order to build a supply chain that is mindful, it is essential to have trust: trust that permeates the entire ecosystem from procurement to employment and is based on ethics. Based on this principle, the work should be defined according to the purpose, then entrusted to the employee to perform it as best as possible, and finally rewarded on the basis of performance (Schlegelmich et al, 2003).

This is a rather general matter of the research since it is one of the core principles and foundation of the research question, therefore it has been discussed with all respondents. "Controllers need to align their targets with customers and other stakeholders", "a crucial personal trait of controllers is to be a great communicator and analytical thinker at the same time" – these aspects were mentioned by financial and business controllers during the interviews. If an organization manages to accept, believe and establish within the corporate culture that well-functioning controlling helps cost-effective operation, making decisions (including technical ones), setting clear corporate goals, eliminating bottlenecks in the company, the business is more likely to prosper in the long run (Pietrzak, 2015).

5.6 Hybrid Role

Reflecting on the overall concept of controlling, the Anglo-Saxon period sees planning and controlling as part of leadership. Furthermore, management control refers to how leaders ensure that the allocation and the use of resources within an organization efficiently achieve long-term goals (La Paz et al. 2020). Correlating to the responses of this paper, it is further confirmed with La Paz et al. (2020) demonstrations that the ideology of management introducing and maintaining the scope of controlling always comes first. However, it does not cut out the negative comments where a shared approach in creating the scope of controlling was discussed of importance. It can be recognized that the behavioural aspects of subordinates are supposed to follow the rules and practices laid from the top. As confirmed by the majority of the respondents, the same rules also applied ten years ago. Therefore, it can be recognized from the interviews that old rules still apply and broader expectations from the top still exists. It further indicates that the management expects the controllers to consider broader perspectives at problem-solving. At the same time, the problem-solving functions are the same as ten years ago. This in relation with Karlsson et al. (2019) findings, where evidence relating to controllers' business partnering traits exists while performing traditional tasks.

The interviewees further referred that the work practices took a hybrid form, which indicated that conventional finance functions are still at play. However, the instruments being used to make a decision have evolved. Hence, more references of added responsibility to the current role can be realized. Additionally, the changing practices are developing the basic process of controlling scope from a managerial perspective. As Hyvönen et al. (2008) mentioned, to maintain a fair management system, the decision orientation of control needs to be concrete where all variants are considered before deciding and ensuring that a proper decision support system is considered to place. It is possible to relate that that management whose work practices follow strong ethics of decision orientation is more to have a strong influence in developing the role of the controllers (Lambert & Sponem, 2012; Berisha & Asllanaj, 2017). Contrasting comments suggest that in order for a controller to posit the character of multi-functionality, it is vital that the managers include controllers in daily decision-making. Another view can be highlighted here where the comment referred to the invisible business partner. It was said that nowadays, it is naturally expected of a business controller to act as an invisible partner in all departments. It can be interpreted that controllers' service has grown

significantly and is still subjected to growth. However, it does not mean that other management orientation concepts are not necessary. All concepts can have its unique way of transforming the role to act more of an invisible business partner.

To theorize, managerial cooperation plays a significant role in implementing the best controlling approach. Incorporating dimensions and environments, the organization's success depends highly on the cooperation between management and controllers. The stronger the cooperation is, the odds will be more in favour for both parties. Several factors, as discussed above, point in the direction of good management cooperation, which can allow room for developments for both, benefiting the organization as a whole. It can be interpreted that the chosen controlling approach of management is vital in transforming the role of the controller. The degree of tensions between the two parties depends on several variabilities. Still, however, as demonstrated above, the expected output of controllers remains high while the job's core remains the same.

Further confirming the controllers' multi-functional role to complete its day-to-day tasks. The controller's to-do list includes nearly 70 activities. In addition to classic tasks such as variance analysis, budgeting, or margin calculations, the role includes organization and management tasks. However, also interests in taxation, insurance, and legal matters can be seen. The likelihood of the factors facilitating a controller's decision can be considered comprehensive compared to traditional roles. It can be understood from this that even in the 1990s, the controller's tasks were interpreted very broadly (Lambert & Sponem, 2012; Erhart et al. 2017; Lasyoud et al. 2018; La Paz et al. 2020). Majority of the interview results points out that the controller is represented in the expert teams as a business expert. Contrasting review saying that the individual's job is only tied to supporting managers to make an economically rational decision. However, relating to the weight of the answers, the support provided by the controller must be tailored to the needs of the manager, taking into account the different economic knowledge, experience, and preferences of the management. The controller can also take over tasks from managers, such as taking over the organization of the planning process to provide more first-hand information.

5.7 Overview chart

Article name	Relevant contribution	Impact on empirical results	Author	Year	Journal
The controller as business strategist	Role of the controller would leap more towards the strategic and consultancy approach due to technological advancements.	Positive	D Hrisak	1996	Management Accounting
Towards increasing business orientation: Finnish management accountants in a changing cultural context	Controllers were hardly engaged in any strategic decision-making back then	Positive	Granlund, M., & Lukka, K.	1998	Management Accounting Research
Management accounting and the challenge of strategic focus.	Increased globalization has contested every working position	Positive	Seal, W.,	2001	Management Accounting Research,
Strategic innovation: the construct, its drivers and its strategic outcomes.	Management must interlink practices for efficient operation	Positive & Negative	Schlegelmilch, B.B., Diamantopoulos, A. and Kreuz, P.,	2003	Journal of strategic marketing,
Controller Involvement in Management: An Empirical Study in Large Italian Corporations	Management involving controllers in day-to-day decision-making affects company performance.	Positive	Zoni, L. and Merchant, K.A.,	2007	Journal of Accounting & Organizational Change

Struggling for the New Role for Business Controller	Controller needs to be more future-orientated considering the speed of external environment changes	Positive	Hyvonen, T., Järvinen, J. and Pellinen, J.,	2008	University of Tampere Department of Economics and Accounting Working Paper
The image of accountants: from bean counters to extreme accountants	Management did not include controllers in long term planning	Positive & Negative	Baldvinsdottir, G., Burns, J., Nørreklit, H. and Scapens, R.W.,	2009	Accounting, Auditing & Accountability Journal
The developing role of the financial controller: evidence from the UK.	controllers' role has developed only in terms of enterprise actions and positioning, but the role itself did not transform simultaneously	Negative	Graham, A., Davey-Evans, S. and Toon, I.,	2012	Journal of Applied Accounting Research
Are You a Scorekeeper or a Business Partner?	Controllers were hardly included into strategic planning	Positive & Negative	Hagel, J.,	2015	Journal of Accountancy
Historical Evolution of Managerial Accounting Theories and Practice Development: Evidence from Kosovo.	Managerial aspects and perspectives towards controllers are changing	Positive	Berisha, V. and Asllanaj, R.,	2017	Journal of Economic & Management Perspectives
Theorizing and testing bidirectional effects: The relationship between strategy formation and	controllers can be symbolized as mere 'value-adding partners'	Positive & negative	Erhart, R., Mahlendorf, M.D., Reimer, M. and Schäffer, U.,	2017	. Accounting, Organizations and Society,

involvement of controllers					
Management accounting change in developing countries: evidence from Libya.	The author argues that controlling roles can be dynamic, follow a heterogeneous pattern, and therefore be subjected to change	Positive & Negative	Lasyoud, A.A., Haslam, J. and Roslender, R.,	2018	Journal of Applied Accounting Research.
The mediating role of management control system characteristics in the adoption of management accounting techniques	External conditions play a significant role in shaping and changing the controller's role and management techniques.	Positive	Youssef, M.A.E.A., Moustafa, E.E. and Mahama, H.,	2020	Pacific Accounting Review
What we know about management accountants' changing identities and roles—a systematic literature review.	The controller main function is to merely support management sub-systems	Positive and negative	Wolf, T., Kuttner, M., Feldbauer-Durstmüller, B. and Mitter, C.,	2020	Journal of Accounting & Organizational Change

6.0 Discussion

As a final remark of the study, the discussion part summarizes the most essential parts of the analysis and their contribution to the already existing literature, they also answer the research question and sub-questions diversely. This part is structured according to the six main sub-topics of the empirical findings and the analysis to keep the flow of the paper consistent.

6.1 Managers and Controllers

Regarding the first sub-topic of the relationship between controllers and managers, it turned out that an essential aspect of well-functional controlling is trust. Even though controllers may work closely with managers, it is the manager's task to make decisions, not the controller, whose function is to support the decision-making process with information, tools, etc. As a somewhat interrelated topic, firm size is an essential factor affecting the function of a controller. According to a business controller, "the bigger the firm, the more specialized a controller's job may be" (not confirmed by other inputs or theory), the smaller it is, the more tasks and routines they have to do; all these affect the relationship between controllers and managers. All the interviewees had somewhat the same opinion, except one of them disregarded the multi-functional modern role of a controller.

When it comes to academic sources from the theoretical framework and others used in the introduction, theory, and empirical data, the study contributes primarily to Zoni and Merchant (2007). The authors, who write that controllers are more productive when having more responsibility at the office was confirmed by two respondents who said the same.

Also, Seal (2001) says that the relationship between controllers and managers has become stronger based on the pure task of controllers are supporting the decision-making process, and more or less than this may disrupt the trust. The first statement is confirmed by the interviewees, although the second was not mentioned or referred to. Therefore it stays an uncertain statement after this research. The first sub-topic covered mainly the third sub-question because managerial expectations are highly dependent on the relationship with controllers.

6.2 Globalization and Modern Supply Chain

The second sub-topic of globalization and supply chains revealed that controllers might depend on developing countries' domestic economic and political states. Also, external events like earthquakes, monsoons, and other natural disasters play a vital role in the inbound logistics of international companies. This theme was deeply elaborated on by a business controller who is also taking part in the purchasing department at H&M, who gave interesting insights related to this matter. On the other hand, financial controllers stated that supply chain management is primarily a financial matter that starts at the controlling/finance department. This phenomenon is more of a one-way process from an internal perspective. This is a contradictory perspective, but all the respondents agreed that globalization plays a significant role in the schedule of everyday challenges.

Literature was used in the research that stated that companies have to adjust to several external factors in this volatile world. This was also mentioned by all of the interviewees, although the literature did not refer directly to the fact the supply chains and the change process of the controller profession are related to each other. The related sources that may be extended by the findings here are Lambert, and Sponem (2012), whose criteria orientations (future, goal, congestion, cost, decision) were included in the theoretical framework, and all of them were elaborated on by the respondents concerning globalization. Therefore the criteria seem to be valid in practice as well. Furthermore, Berisha and Asllanaj (2017) discussed that due to globalization, the role has become more fast-paced with wider functionality, so it could be added to this theory that there is a mutual effect on both the role and the supply chain management of companies. The second sub-topic provides new information on the first sub-question because it is relevant to discuss whether globalization has a vast effect on controller's daily tasks regarding external environmental factors.

6.3 Technology and Big Data

Furthermore, the third part about technology and big data was perhaps the strongest argument formulated during the study since all respondents confirmed that the role had been shaped vastly by big data and digitalization. Working with several ERP systems is a fundamental skill that anybody who is a controller should excel at. Data filtering was said to be a crucial task to do as a controller, and handling integrated corporate governance applications belong

to the professional responsibilities as well in order to strengthen time management and quality production. One of the respondents mentioned that working with data is becoming more and more complex. It is a never-ending process. A few concrete applications were mentioned by the interviewees, like cloud technology and programming skills, which may come in handy at work, although the research process did not go deep into the technical aspects and tools of controllers.

Berisha and Asllanaj (2017) write that working with data includes activities like assembling, mining, and estimating, although the respondents mentioned more of a general point of view, meaning that controllers mostly create, read, update and delete data when it is required. However, the theoretical part mostly supports what was mentioned during the interviews; therefore, it is evident that the role has become more dependent on information technology and data. This process is thought to be continuing, and future controllers might have to be programming experts and fully IT literate to be successful. The literature that may be extended effectively by the new information is Lambert and Sponem (2012) because volume, velocity, variety, and value are said to be crucial for controllers when it comes to big data. Also, data filtering could be a great point to mention here because controllers are said to act as data filters between databases and management. Berisha and Asllanaj (2017) elaborated on the topic of technological evolution in terms of business intelligence and machine learning, this was slightly touched upon during the data collection, but respondents did not say that controllers are much concerned with, for instance, machine learning nowadays. This theme answers some of the first and the second sub-question because technology is one of the most profound internal and also external factors which shape the role, and it involves multiple hard skills which are “must-have” in the 21st century.

6.4 Business Trends in Sustainability

The fourth section about business trends in sustainability is a mysterious part of the overall outcome. One business controller mainly discussed it, who had a strong opinion about it, the others less. According to him, the controller job is highly exposed to business trends in corporate social responsibility, green initiatives, and certain compliance-related matters. However, the other interviewees did not see a close connection between the evolving role and sustainability. The financial controllers said that it is more of a global process that businesses are going through. All the employees who work at corporations may be affected by it to some

extent. They also had a kind of pessimistic view on corporate social responsibility and its real value because they mentioned that until for-profit organizations have financial goals primarily, everything else, just like the environment, is secondary, and controllers also experience the overall effects of it not a direct correlation. It is difficult to draw conclusions about whether the role is connected to sustainability because the research did not end in an adequate amount and quality of information. The theoretical framework includes a few bits where sustainability is written to be related to globalization. However, there is no direct indication from previous research which would make a standpoint about this topic. Hence, there is no additional reference to further elaborate on possible topics within this sub-topic. Also, the output of this section did not provide adequate information to be added to applied literature. This sub-topic is related mostly to the first sub-question that concerns external factors which may contribute to the changing role of controllers.

6.5 Financial, Operational, Managerial Aspects

The fifth sub-topic of controllers tend to act as a bridge between financial, operational, and managerial tasks shows a more coherent picture because respondents and literature are mostly aligned. The data analysis revealed that all of the controllers had been involved in core business operations in a wide manner which is a relatively recent business requirement. Except for one financial controller, all of the respondents admitted that the profession includes a vast number of operational tasks besides the financial ones and that controlling became a much more fast-paced job. It is a managerial requirement to think and act in an agile way.

As it has been summarized in the literature, it turned out that controllers have to try to find a balance between being an analytical thinker with a rational mindset and being able to communicate and collaborate with others. As O'Grady (2016) wrote that the main task of controllers is to support managers and their decision-making processes, the respondents confirmed that they are usually involved in operational (mostly) and managerial tasks when it is needed, although they do not act as managers and the role has its very clear scope.

It sort of seems like reading the data input and the literature on this topic that controllers are definitely multi-functional employees who have to adapt immensely to management and company needs. This is also the case why the controlling requirements stay so dynamic. The study may add new findings to already existing research papers from above like Erhart et al. (2017), who noted that controllers have a new essential responsibility of being a good

communicator between different stakeholders, which could be extended by the three different areas of mostly operational and then managerial tasks besides financial. This sub-topic touches upon all three sub-questions to a certain extent because of their nature of wide variety in terms of the job description, business requirements, and professional demand.

6.6 Hybrid Role

Finally, the last part of the study's data input examines whether controlling has become a hybrid role meaning that it is not really possible to describe the foundational tasks and responsibilities. Here there is a certain contradicting or oppositional stand point between business and financial controllers based on their personal experience. Business controllers clearly noted that their jobs are very dynamic and there is a constant change process within their work, meanwhile financial controllers thought that the core of controlling like budgeting, forecasting and arranging mainly financial matters. The term "hybrid" is somewhat hard to interpret clearly so there might have been sort of personal misinterpretations even though the researchers tried to make all the concepts clear during the interviews.

Literature is also somewhat divided and does not stand by one side because there are valid arguments for both opinions, La Paz (2020) mentions that setting the scope of a job comes always at first which is also related to the previous sub-part but there is no indication of dynamic managerial requirements based on the profile of a company. Others like Hyvönen et al. (2008) states that decision support systems have priority or Berisha and Asllanaj (2017) says that managers have an important role of developing the controller job's nature which means personal preferences may overwrite a professional scope if that is the case. Financial controllers had a questioning mind of the hybrid nature although business controllers mentioned that they definitely feel like it is a hybrid role. Based on the found information and the literature finally it may be provenly stated that the role has effectively become hybrid in reality. Hence, as it can be read above, papers which may be extended by the findings may be Hyvönen et al (2008), La Paz (2020) or Berisha and Asllanaj (2017) to have a broader picture of how roles can evolve by time and needs. The last part of the study goes back to the second and of course to the third sub-question because it analyses the job itself, combining with managerial aspects.

7. Conclusion and Future Research

The aim of the research was to reveal the most profound findings of the controller profession's evolution by collecting data from professionals. As it is written in the Introduction by using the "bean-counter" Swedish term, the study ended with the suggestion that controllers have definitely become so called "business partners" but only with a defined scope and without managerial responsibilities and tasks. In terms of problematization of the study, controllers are mere "value-adding partners" with a great emphasis on communication between different kinds of stakeholders. Controllers are definitely more strategic and they need to have a consultant type of work orientation. The role has definitely become way faster due to globalization and technological advancements and the job is IT-centred stronger than ever. Managerial expectations are highly dynamic which means that a controller's task may vary depending on company needs and as a consequence the role may be interpreted as a hybrid one because of many new tasks and this variability. One thing is constant: controllers must support the decision-making process of managers. Regarding research contribution, the problem was analysed in a Swedish context by asking professionals about the changing role and its functions. The research is intended to provide a valuable information package to anyone who is interested in the profession of being a controller, also the paper extends already existing literature on the topic to some extent. In brief, for the second sub-question the answer would be having a strong relationship between the two parties by the controller is supporting decision-making without managerial responsibilities. The second sub-question's answer would be mainly global supply-chain systems and technological advancements (IT). The third sub-question's end result is closely related to the second one and controlling is presumably a hybrid role because of its added operational and managerial aspects that is required in a fast paced high quality manner.

In terms of future research, authors could continue collecting data on the relationship between sustainability compliance, regulations, regular tasks and new responsibilities of controllers since it was a part that somewhat lacked consistency during the data collection. Moreover, research could have a separate establishment of examining the overall change of corporate jobs that is due not to financial and capital factors but other variables that happens globally or internally because in case of this study, it is not completely revealed whether some of the changes apply only for controllers or other professions as well.

However, the study is successfully closed with an outcome which may be utilized academically later on, its content and structure enhances a quality research input to be read by anybody who is interested.

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Appendix

Appendix 1,

Data Analysis Summary and Findings of Interviews

1. Recent Evolution of Controller's Role

- being more involved into a company business model
- companies think out of the box when it comes to the role
- core of the job always remained the same, it did however get new attributes or characteristics due to globalization
- following a trend of shifting towards e-commerce as of now
- more business oriented, it's a hybrid role

2. Relevant Internal Factors

- systems which allow overall control over all documents, items etc.
- size (if small, one controller is responsible for finances, business etc.)
- the hierarchy between the management and the controller,
- corporate governance and organizational structure

3. How do these aspects affect the role of the controller?

Culture

- corporate culture needs to be open to accept changes and new ideas, then the controller can use its full potential of being a business partner
- culture assumes that the decisions made by the controllers are always accurate and reliable
- corporate values act as guide and motivation
- trust is important within culture
- there are always a lot of informal aspects happening between employees that may affect the role differently

Human and Financial Resources

- financial resources are very important, but that is not the main reason why people are liking their job and developing
- working conditions and team spirit are essential
- the joy of having salary happens once a month but the joy of having social colleagues happens everyday
- these factors affect the change directly tough

Current Technology

- giving a useful training or introductory to the new system has a vast effect
- depends upon how the company introduces the system
- the role is much about big data
- power of BI is outstanding in the change process
- machine learning is clearly affecting the controlling position
- using big data equals knowing a lot about the market) knowing your customers/products better)
- better decision making generally
- KPIs might easily change a lot due to technology

4. The Most Relevant Internal Factor

- corporate culture
- current technology
- managerial need to have a business-oriented controller

5. Relevant External Factors

- technological advancements
- globalization, controllers must become more aware of cultural differences and market specific trends
- digitalization

- trends in sustainability shape the role the most

6. How do these aspects affect the role of the controller?

Globalization

- overall picture of the global market than thinking locally has a strong effect
- each country's political situation is also important
- strike in a country then the whole process afterwards changes in our business due to that
- if some locations are affected by natural disasters, then supply chains will be weakened
- natural disasters
- your supply chain becomes way more complex
- job of a controller became faster as well
- controllers must be more agile

Technological Advancements

- online selling may become the majority share of the business which shapes the role
- availability of data
- filtering data is crucial to set up the right KPIs

- you can automatize processes related to data

Competitive Environment

- change in consumer taste may change businesses and industries
- controllers need to align their targets with the buyers and other stakeholders

7. The Most Relevant External Factor

- technological advancement
- globalization

8. Required Skills for a Controller

- being good at numbers
- confident with communicating to others
- analytical, mathematical, people and managerial skills,
- strategical thinking
- ability to see correlations and patterns in data

9. Crucial Personal Traits of a Controller

- highly interpersonal, communication oriented and analytical way of thinking
- flexible personality for agility and adaptiveness
- strong team player

10. Relevant Tasks/Assignments (Dynamic vs. Standardized)

- standardized rules and practices for a good work flow are inevitable
- explaining something to stakeholders who work at different departments with no financial or business background which is more dynamic

11. Business Partner or Traditional Controller?

- it's an accountant kind of job basically but controller is a more creative type of it
- definitely business partner

12. Change of Managerial Expectations

- being excellent at what you do
- high performance is naturally demanded
- becoming an informal leader in certain situations
- more responsibility than before
- becoming a bridge between financial, operational and managerial aspects

13. Relationship with Management

- management closely support controlling
- controlling is viewed equally as important as any other

14. Management's View on Controlling Job

- being a bridge between the top and frontline employees
- business partners

15. Future Evolution of Job

- will be equal to a CFO in a couple of years in terms of responsibility
- more people management
- digital first mindset
- machine learning
- almost everything automated, more communication oriented
- controllers will become a filter of information processing

Summary (Empirical Findings and Data Analysis):

- Relationship between controllers and managers
- Globalization, complex supply chains affected by natural and political events

- Technology, big data
- General business trends in sustainability
- Controllers are a bridge between financial, operational, managerial aspects
(communication with all kinds of stakeholders)

Role is becoming a hybrid one, although its traditional foundations stay the same

Appendix 2

Interview Guide - Controller

General Information

- Name/Gender
- Age
- Background/Education
- Job Title
- Years of Experience

1. Please elaborate on your job title and description.
2. How long have you been working with the role of a business controller?
3. Previously, have you operated somewhere else in the same or different organisation?

Internal Environment

4. Do you think a controller's role evolved significantly over the last decades? If yes, how and why has the role changed?
5. Internal factors are factors within a business that the organization can control. Which internal factors do you consider necessary in changing your role as a controller? Why is it so?
6. Can you please exemplify on the possible scenarios of the following factors:

a. Corporate culture- How does the corporate culture play in changing the role of controllers?
How and why?

b. Human and Financial Resources- Do you think a change in working conditions/payment terms would affect your role as a controller? If yes, how and why?

c. Current Technology- Does the company apply the latest technology for improved functionality of a controller? How does the introduction of new applications affect the role of individuals?

7. If you can name one, which internal factor contributed most to controllers' changing role over the past few decades?

External Environment

8. External forces can affect a company's participants and its functionality. In your view, which external factors do you consider important in influencing the role of the controller?

9. Can you please exemplify on the possible scenarios of the following factors:

a. Globalization- How does globalisation of business influence the role of a controller? If a firm decides to go global, what does a controller face challenges?

b. Technological advancements-Can you explain how your way of working is affected when technology and IT develop? For example, new systems, time perspectives, before?

c. Competitive environment- Do you, as a controller, need to be aware of the company's market? Why? How is your work affected by changes in the market? For example, changes in working methods,

9. If you can name one, which external factor contributed most to controllers' changing role over the past few decades?

Hard vs. Soft Skills

10. In your view, what are the must-have skills required for a successful role of a business controller?

11. Any personal traits you would like to mention that are crucial for a controller to hold? Can you elaborate on the characteristics? Why?

12. In your own words, can you describe how the role of the controller changed over time? Did the characteristics of 21st-century controllers dive more into hard skills or soft skills? Why?

Top Management Expectations

13. Can you briefly elaborate on the most critical *tasks/work assignments* being performed today? Dynamic or standardised?

14. Does the work description resembles an act of a business partner or just a traditional controller?

15. What training was required when you started working as a controller? Vs. What training is needed to be a controller today?

16. What were your duties when you started working as a controller? Vs., what are your responsibilities now?

17. Do you think management expectations have changed towards controllers over the past decade? If yes, how and why? Is high performance naturally demanded from a controller nowadays?

18. How do you view your current work towards the management of the company? For example, contact, directives of administration, how does this work?

19. To what extent do you believe that the company's management views your work as a business partner? Do the management initiatives demonstrate a sense of a business partner or bean counter perspective?

20. Do you have any tasks that you do not think would be part of a controller's job? Which?
Do you have any functions that you believe should be included in a controller's duties?
Which?

Future role of the controller:

21. How do you think the controller role will change in the future?

- How would you describe the future controller? (characteristics, education, tasks)