

Emma Butterfield

Managerial Decision-making and Management Accounting Information

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| <p>Considering the pace of business changes and significant amounts of information available to businesses using modern technology, one prime challenge has become to filter out the valuable information and present it in a manner that makes it useful for managers to take on business decisions. These changed requirements have led management accounting to adapt alongside. This Master's Thesis is a case study of Tecnotree Group, a global provider of telecom IT solutions, the purpose of which was to explore how the current management accounting reports correspond to the management information needs and to identify how the management reporting could be improved or supplemented, so that the reports would benefit the management and better support informed and efficient decision-making within the organization. More explicitly, the study sought to provide answers to the reports usability, quality, perceived challenges to extract value to support decisions and development directions.</p> <p>The theoretical framework of the study defines accounting and its main functions, the managerial decision-making process, and the ways in which management accounting information can support decision-making. Additionally, described are the relationship among data, information, and knowledge, the progression of knowledge considering the relevance for a decision setting and the management reporting process, including effective reporting principles and required qualities of useful reports. The main empirical data collection method used was a semi-structured online questionnaire targeted to the Group's management.</p> <p>The study results showed that the management saw important to have reports' financial information available to support decision-making in many areas, and the majority used these regularly on a monthly basis. The results indicated also that the reports affect decision-making and management is likely to act on the basis of the information received. However, in most of the cases only about half of the available information was utilized. The quality of the reports was considered also to be variable. In light of the results, the main challenges perceived to extract value from the reports to inform decisions were related to the availability, consistency, accuracy and user-friendliness. Furthermore, the results indicated that more attention should be put on seeing the financial information as a strategic resource to reach a more holistic understanding of this in the organisation.</p> <p>The study results suggest more emphasis in management reporting should be given to getting the right information to the right people in time, emphasizing the overall user experience to increase the reports usability in decision-making, considering the important role of high-quality, multi-level communication and interaction and also to adding more analysis to the reports, in order to build a more in-depth view to support decision-making.</p> | |
| Keywords | management accounting, managerial decision-making, management reporting, information, knowledge |

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1 Introduction

In this opening chapter, we introduce the background of the study and describe the business dilemma. In addition to this, we will discuss the purpose and delimitations of the study, alongside with the research questions. Furthermore, the structure of the study will be presented to conclude the chapter.

1.1 Background

We are all living and working in an increasingly fast paced and ever changing world. Where we can say information is everywhere we can see and imagine – in emails, documents, websites, databases, and reports. This is called the digital age that has brought us a quantum increase in the amount of data available to the modern organisation. But it is not just the amount of data that sets this time in history apart, it is the speed with which data reaches organizations, the variety of form, and the opportunities available to learn from new data, combine with existing data, and create new insights. (EIU, 2011)

Like Axson (2010) states “information is the lifeblood of the modern corporation. Without it, decisions cannot be made, customers cannot be served, and earnings cannot be grown.” Whilst all information is valuable, it ironically alone doesn’t have all the answers and the rapid flow of data may even result in organizations losing control over the quality of information. This was reflected in the research, conducted by Harvard Business Review Analytics Services (2014), to understand the level of confidence corporate leaders have in the decisions made. That shows there is a lack of confidence in, how the information is influencing decision-making, as based on the data and information available to them, 42% of the global business leaders don’t have confidence in any decisions made, due to a lack of information or easy access to it. (HBR, 2014)

Yet good planning and control over operations via effective decisions needs to be based on a steady flow of good quality and up-to-date information. That means one of the prime challenges facing modern businesses is obtaining quality information from the vast pool of data available to take on business decisions. Because, information quality is considered one of the key determinants for the quality of an organisation’s decisions and actions (Stvilia, et al., 2007). Since, it is perceived that high-quality information makes it easier to convert available information into knowledge, by helping to interpret and assess

the information, combine with prior knowledge, and facilitate the utilization of information in new contexts in the organizations (Eppler & Wittig, 2000). Thus, making the acquisition of quality information the key to attaining a competitive advantage (Salaun & Flores, 2001). However, before information can be an asset for business it needs to be managed properly and put into context to determine, what is useful, and what is not.

Although, it is widely admitted that information plays a critical role in the success of organizations, information acquired by decision makers will have little impact on ultimate performance of an organization, if it is not really used effectively in the process of decision-making (Davenport & Beers, 1995). In decision-making, the contribution of information reduces uncertainty, allows organizations to quickly respond to business events, and supports companies making changes in business strategies, plans and performance indicators (Popovič & Habjan, 2012). The crucial value of relevant information, especially, in strategic decision-making is illustrated in Citroen's (2011) study findings, which state that having more relevant information at hand reduces uncertainty, adding to the comfort factor and feeling that the ultimate decision has been supported by a more rational process.

This means information has become indispensable for decision-making in any business organization, regardless of the activities pursued and whether the activities are profit-seeking or non-profit. It has become a much needed asset, as the success of an organization is going to be directly proportional to the knowledge it is able to apply in real time to manage the business processes.

Accounting, considered to be a key source of information about business performance, can help managers to develop knowledge about the organization's environment in several ways. It makes visible those events that are not perceptible by daily activities of a manager and provides an overall quantitative perspective on their work. (Hall, 2010) Consequently, accounting information can reveal issues that are overlooked during ordinary daily activities and can provide an independent control over operations to help managers be aware, which allows the manager to determine the meaning and significance of all the operations (Socea, 2012).

However, as a result of the dynamic environment, accounting must adapt alongside to satisfy the decision makers constantly changing information needs. This has widened and deepened the role of the finance function in the organizations and has contributed

to the transition from the traditional role focused on number crunching and maintaining the overall functioning of the accounting systems to an increasingly business oriented role. The business orientation of management accounting meaning the willingness and ability of management accounting to deliver more added value to the management in decision-making and control of the organizations. (Järvenpää, 2007)

1.2 Business dilemma

A decision is essential for an organization's survival and development, since it is prior to any action (Socea, 2012). A manager is an individual responsible for an organization or a set of entities. Any manager is invested with formal authority in accordance with his assigned statute. In their role, managers have to make effective decisions to keep the organization flourishing. Hence, as long as there is management, there will be the "problem" of how to manage better. Therefore, as Greenberg & Baron (2008) say, to make decisions is one of the most important and critical activities of organizations. Since, organizations as systems build themselves up by making decisions. Every made decision creates and leads to a new decision. These decision might involve the strategic direction of the organization or simply just deal with the day-to-day activities of employees.

Thus, management is constantly confronted with the problem of alternative decision-making, especially knowing that resources are relatively scarce and limited. This necessitates doing the right things, the appropriate use of resources and the need to set different things in the order of importance. However, as we live in an age of data abundance. Business managers have today access to far more data than any previous generation of managers, and that is transforming the way many business decisions are made.

Therefore, it is pertinent that quality accounting information is made available for proper and precise decision-making, maximization of profitability and optimal utilization of scarce resources. Because accounting information is not only required for evaluation of the past and keeping the present on course; it is useful in planning the future of the organization. (Nnenna, 2012) Given these conditions, the accelerating pace of business changes and the significant amounts of information available to businesses using modern technology, the challenge is to filter out useful information and present it in a manner that makes it useful for managers.

1.3 Research purpose and delimitations

The research organization in this study is Tecnotree Group, my employer, a global provider of telecom IT solutions. The portfolio of products and solutions provides to telecom operators, known today as communication service providers (CSP), the full range of business management systems for the management of products, customers and revenue. The business is based on system project sales, maintenance contracts, managed services, and on customising, support and professional services. The corporation holds today a strong footing, especially, in the developing markets, such as, Latin America, Middle East and Africa. Globally employing around 1 000 people and providing globally products and services for circa 90 telecom operators in around 70 countries. The company is listed on the main list of NASDAQ OMX Helsinki. The corporate headquarters are located in Espoo, Finland. (Tecnotree, n.d.-a)

In this study, we shall discuss the importance of financial information from the organization's management point of view. The study will concentrate on internal financial reporting, leaving outside external reporting controlled by laws and regulations and operational reporting. The focus of this study is to explore the use of reported management accounting information in managerial decision-making. The purpose is to create a picture of the reality, an understanding of how the current management accounting reports correspond to management information needs, and raise out potentials for development.

Objectives are necessary for every study, as they provide a sense of direction and focus the efforts. The classification of research purpose often referred to in the literature is the threefold one of exploratory, descriptive, and explanatory. An exploratory study is used when the purpose of the research is to find new insights and to understand the nature of a problem. The aim of a descriptive study is to provide a clear picture of the phenomenon studied. Whereas, the explanatory study is used to explain the relationships between variables in a situation or problem. (Saunders, et al., 2009, pp. 139-140)

The purpose of this study is to gain a deeper understanding of how the reported management accounting information can better support informed and efficient decision-making within the study organization. Therefore, in this study the exploratory research design is employed. More explicitly, the aim is to identify how management reporting could be improved or supplemented, so that the reports would benefit the organization's management.

The main research problem that this study will aim to explore and provide answer to is:

- How the reported management accounting information can better support informed and efficient managerial decision-making process?

Sub-questions that are to support more detailed exploration of the main question are:

- To what extent does the management make use of the current management accounting reports - how useful are these perceived?
- What challenges are seen to hinder the utilization of reported management accounting information in decision-making?
- What kind of management accounting reports should be produced in the future to support the management activity - what issues should be considered?

Through discovering the answers to the main and sub-questions this study seeks to understand the role of management accounting information as an aid to management decisions-making in the study organization. The findings are expected to present the core factors that by understanding and improving, would enable clear and concise reports, which serve management decision-making as effectively as possible to support creation of business value.

1.4 Structure of the study

The remainder of this study is structured as follows. In the next chapter, we provide a detailed description of the methodological framework adopted in this study. In the following two chapters, we introduce the conceptual framework of this study and review prior academic research and literature. After this we discuss the empirical part of this work, namely the case study. Then we present the empirical results and findings and after that the study is completed with the conclusions chapter.

2 Research methodology

In this chapter, we present the methodological framework adopted in this study. Discuss the various research philosophies and approaches, and review the choices involved in the research design and explain which of these are relevant to this study. Furthermore, the reliability and validity of the study findings will be elaborated.

2.1 Research design

In overall, the research design as described by Yin (2009, p. 26) can be seen as the “a logical plan for getting from here to there”, where here represents the set of research questions to be answered and there is some set of answers to these questions. Between is the journey that may contain a number of major steps, including the collection and analysis of the relevant data. In other words, the research design is a framework or blueprint for conducting the research. Within this study to illustrate, we use the metaphor of the “research onion” developed by Saunders, et al. (2009, p. 108), to describe the stages that need to be covered when undertaking a research process. Viewed from the outside, each layer of the onion represents a step in the research process, as visualized in Figure 1. Thus, peeling the onion illustrates the progress of the research process, starting with the research philosophy. Followed by the research approach and then the research strategy, research choices and time horizon. Finally, reaching the centre of the onion, which contains the data collection techniques and procedures.

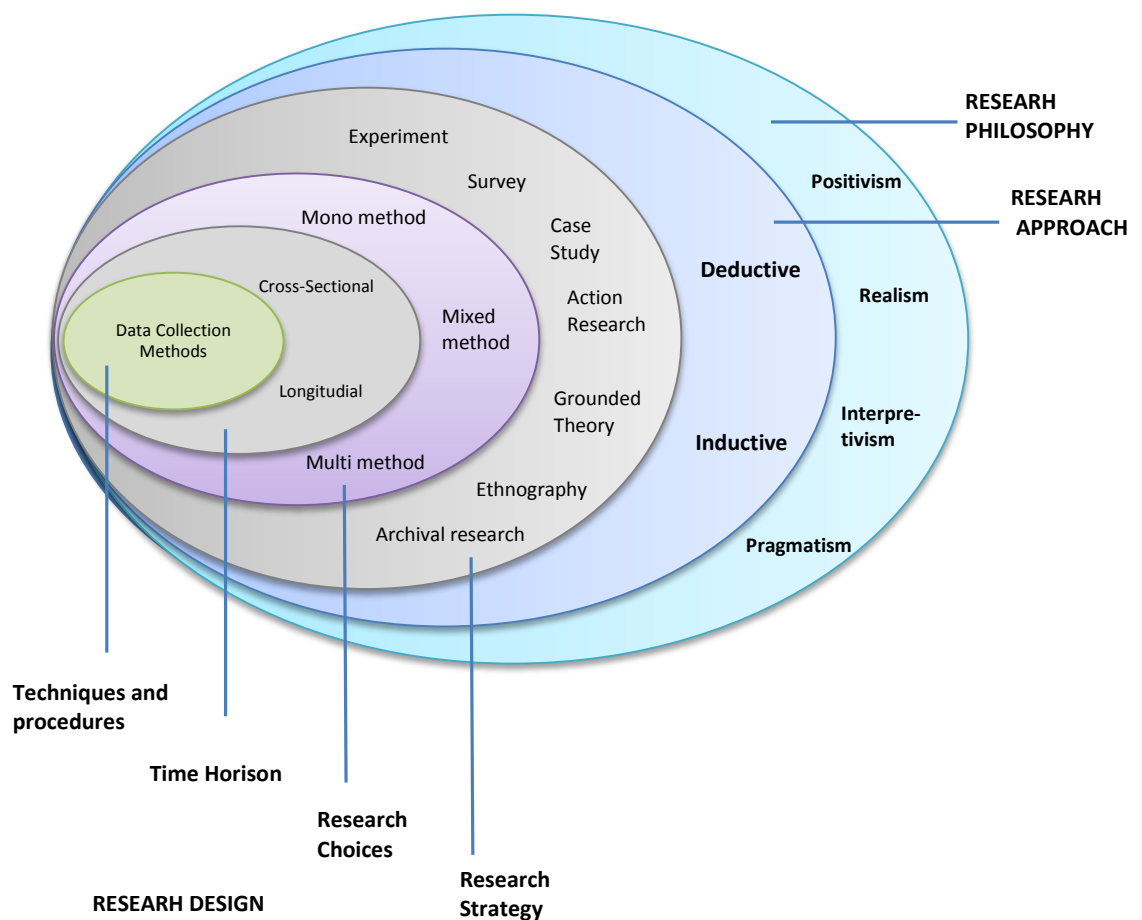


Figure 1. The Research onion
(Saunders, et al., 2009, p. 108)

It is the researcher's understandings and associated decisions, in relation to the outer layers of the research onion that provide the context and boundaries within which data collection techniques and analysis procedures will be selected. Once selected, the research philosophy acts like a "set of lenses", that allows the researcher to interpret the study fieldwork within a particular set of established assumptions, thus merging the usefulness of the paradigm with the practical application of conducting research. (Burke, 2007)

2.1.1 Research philosophy and approach

Research philosophy forms the outermost layer of the research onion. In general, philosophy can be defined, as the questioning of the basic fundamental concepts and the need to embrace a meaningful understanding of a particular field. (Burke, 2007) The research philosophy comprises important assumptions about the way people view the world and the relation to the development and nature of knowledge. Generally, there are three main ways of thinking about research philosophy: epistemology, ontology and axiology. Epistemology relates to what constitutes acceptable knowledge in the field of study. Ontology studies the questions of the assumptions researchers have about the way the world operates and the commitment held to particular views – the nature of reality. Axiology is concerned with judgements about values. It would be misleading to assume one research philosophy is better than the other, they are better at doing different things. Hence, the adoption of the right research philosophy depends on the research question that a researcher is seeking to answer. However, the practical reality is that a particular research question rarely falls neatly into only one philosophical domain. (Saunders, et al., 2009, p. 107 to 116)

According to Saunders et al. (2009) there are four different research philosophies; pragmatism, positivism, realism and interpretivism. The research philosophy of pragmatism argues that based on the research question(s) either or both observable phenomena and subjective meanings can provide acceptable knowledge. The focus is on practical applied research, integrating different perspectives to help interpret data. Positivism assumes that the reality exists independently of the thing being studied and only observable phenomena can create data i.e. facts. This usually deals with large samples of quantitative data, statistical hypothesis testing and the end result of such research can be law-like generalizations. Realism considers that there is a reality independent of human thoughts and beliefs. This assumption underpins the collection and analysis of the data.

The last research philosophy, interpretivism, suggests that important is the researcher's understanding of the differences between humans in our role as social actors in the natural environment. This type of research is value bound and focuses to understand, what is being researched considering a particular set of circumstances and individuals at a specific time. Therefore, likely to include data collection and analysis of qualitative data from in-depth investigations with small samples to gather rich insights into subjective meanings. (Saunders, et al., 2009, p. 109 to 119)

The next layer of the research onion is the research approach. That has two main approaches: deduction and induction. The deductive approach is described as the development from general to particular. It comprises the development of an idea, or hypothesis, from existing theory, which can then be tested through the collection of data. With the inductive approach it is vice versa, the first step is to collect data from participants and analyse that data. The next step is to develop a theory as a result of the analysis. The structure of this approach is more flexible and less concerned with the need to generalise, more commonly used in qualitative research. (Saunders, et al., 2009, pp. 124-127) There is also a third research approach called abduction, which is a cross between deduction and induction. The abductive approach is based on redirections in the research process. Rather than relying on deduction or induction, the abductive logic stresses going back and forth between the theoretical framework, data sources and analysis; i.e. the matching of these three elements. (Dubois & Gadde, 2002)

Depending on the perspective the terms quantitative and qualitative can be used in two distinct discourses, one relating to how the researcher understands the world and the ultimate purpose of the research and the second referring to research methods - how data are collected and analysed. (McMillan & Schumacher, 2005, p. 12) Typically, quantitative approach is used to respond to research questions requiring numerical data, the qualitative approach to answer questions requiring textural data, and the mixed methods approach when both numerical and textural data are required for the research questions (Williams, 2007). Creswell (2003) describes that the quantitative approach is about collection of data so that information can be quantified and exposed to statistical treatment, in order to support or contradict the alternate research claims. Whereas, the qualitative approach takes a more holistic approach to examine the meaning of social phenomena, rather than looking for causative relationships between established variables. This means the quantitative method provides an objective measure of reality, while the qualitative method allows to explore and better understand things being highly involved in

their natural settings, attempting to make sense of actual experiences, or to interpret, phenomena in terms of the meanings people bring to them. (Williams, 2007; Creswell, 2003)

For this study, the research philosophy we have chosen is pragmatism that places "the research problem" as central and applies all approaches to understanding the problem. Pragmatism is not committed to any one system of philosophy or reality, instead the focus is on the 'what' and 'how' of the research problem based on the intended consequences, that gives the researcher freedom of choice. (Creswell, 2003, p. 12) The pragmatic approach involves using the method which appears best suited to enable answering the research problem, thus avoiding getting caught up in philosophical debates about which is the best approach. Thus, the researchers can use both quantitative and qualitative data as the focus is to provide the best understanding of the research problem. Focus is on practical applied research, integrating different perspectives to help interpret data. (Saunders, et al., 2009, p. 109 to 119) This study is based on a qualitative adductive approach and builds on the inevitable interaction of theory and evidence, the back-and-forth character of the research process.

2.1.2 Research strategy

Peeling away the methodological choice reveals the next layer of the onion that is strategy(ies). As the label already suggests, the researchers can use one strategy or more within the research design to answer the research questions. The strategy, as described by Remenyi et al. (2003) provides the overall direction of the research including the process by which the research is conducted. Saunders et al. (2009, p. 141) state that the appropriate research strategy has to be selected based on the research questions and objectives, the extent of existing knowledge on the subject area to be researched, the amount of time and resources available, and the philosophical underpinnings of the researcher. The strategy of the research can include a different number of approaches, such as experiment, survey, case study, action research, grounded theory, or a systematic literature review.

From these various strategies, we sought to adopt in this study, as the appropriate research strategy the case study. Because, it is an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources. In which, Creswell (2003, p. 15) states the "researcher explores in depth a program, an event, an

activity, a process, or one or more individuals”. Defined by Yin (2009, p. 18) as an “empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.” Dul & Hak (2008) complement by defining the case study as follows:

“A case study is a study in which (a) one case (single case study) or a small number of cases (comparative case study) in their real life context are selected, and (b) scores obtained from these cases are analysed in a qualitative manner (Dul & Hak, 2008, p. 4).”

In particular, the case study is used to gain rich understanding of the research context and processes being enacted. Because it is seen to have the ability to produce answers to the ‘why?’ question as well as to the ‘what?’ and ‘how?’ type questions. Case study research, moreover, can accommodate both qualitative and quantitative data allowing the researcher to get a rich mix of data for the study by employing variety of data collection techniques, i.e. observation, interviews, documentary analysis and questionnaires. (Saunders, et al., 2009, p. 146) Case study offers the possibility of understanding the nature of accounting in practice that can be used in a variety of ways by researchers: descriptive, illustrative, experimental, exploratory, and explanatory. The distinction of these different types of cases may not necessarily be always clear-cut. Despite, the list gives an indication of the range of case study usability: describe the nature and form of current accounting practices, illustrate new and possible innovative practices, examine the difficulties/benefits involved in implementing new procedures and techniques, explore the reasons for particular practices, or understand and explain the specific rather than produce generalizations. (Ryan, et al., 2002, pp. 143-144)

Whilst case study research is a distinctive research strategy, which presents many advantages to a research study, and allows in-depth investigation of the issues at hand, it is not without criticism. As some of the common criticisms of case study, Yin (2009, p. 14) has identified lack of rigor, being bias, difficulty to generalise, and taking too long and producing hefty documents. In response, it was noted that the quality of a case study can be enhanced by establishing reliability and validity of the study findings. (Yin, 2009, p. 24) These we will discuss in more detail subsequently, under the subheading of reliability and validity of the research.

The abductive approach in case study research stresses emergence and flexible processes as strengths of good case studies. In the abductive logic, it is important to let the

empirical reality interact with conceptual ideas in the analysis, to be open to new ideas and to let the case process develop. Thus the evolving framework and case become the cornerstones of the case study. (Dubois & Gadde, 2002) This reflects the continuously evolving understanding of the researcher. This case study research process using abductive approach is visualized in Figure 2.

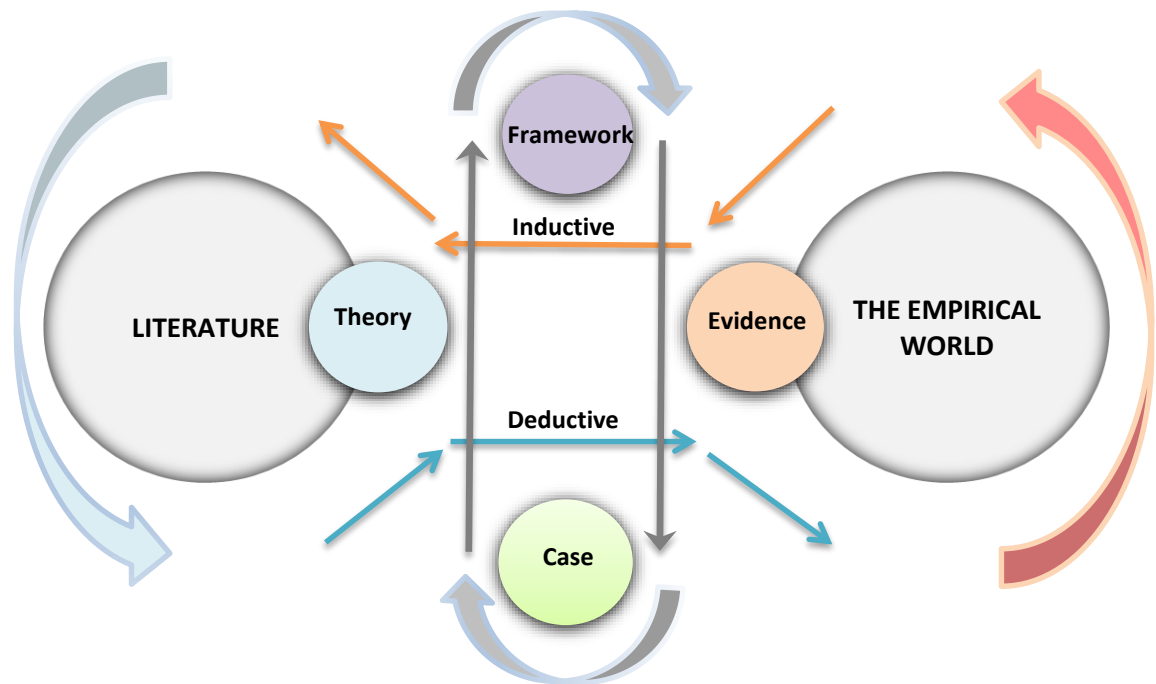


Figure 2. The research process, adapted from Dubois & Gadde (2002)

This research process starts with the preparation review of theory that gives an initial indication of the types of evidence that should be looked for in the case study and builds on the matching of theory and reality done by going back and forth between the framework, data sources, and analysis to discover new dimensions of the research problem.

2.1.3 Research choices and time horizon

The choices outlined in the research onion include the mono method, the multi-method and the mixed method. As the names of these choices suggest, the mono-method means using one research approach for the study, either a single quantitative or qualitative data collection technique with the corresponding analysis procedure. While in the multi-method, a wider selection of either quantitative or qualitative methods are used. Whereas

the mixed-method combines both qualitative and quantitative data collection techniques and analysis procedures. (Saunders, et al., 2009, pp. 151-152) Hence, this study is a mixed method research, as it involves a combined methodology.

The final layer of the research onion, before reaching the core, highlights the time horizon over which the researcher carries out the research project. Two types of time horizons are specified: the cross-sectional and the longitudinal time horizon. A 'snapshot' horizon is termed as cross-sectional, whereas the diary perspective is termed as longitudinal. The cross-sectional time horizon is used when the research is concerned with the study of a particular phenomenon to answer a question or address a problem at a specific time, likely to undertake strategies such as a survey or case study. Conversely, a longitudinal time horizon for data collection refers to the collection of data repeatedly over an extended period of time, and is typically used where an important factor for the research is examining change and development over time. The selected time horizon is not dependent on a specific research approach or methodology. (Saunders, et al., 2009, p. 155) The time horizon in this study is cross-sectional, as this is a case study of a particular phenomenon in an organizational environment at a particular time.

2.1.4 Data collection methods

The empirical part of this study is conducted in the case company, in order to analyse and observe its management reporting practices and conceptions, and to compare practice to the theory. The empirical evidence for this study is gathered by using primary and secondary data. Secondary data means the information that already exists, whereas primary data is original data, new data collected for the purpose of the specific research (Saunders, et al., 2009, p. 256). The data collection in this case study is a combination of documentary data, semi-structured questionnaire and participant observation, with main emphasis on the first two. These are considered to be the most suitable data collection methods taking into account the subject of the study, available time resources and the information requirements.

Documentary data, in this study, is considered as a source of secondary data. As defined by Scott (1990), "a document is an artefact, which has as its central feature an inscribed text." Simply put, this means a document is a written text. These documents are produced by individuals and groups in the course of their everyday practices, for their own immediate practical needs. The documents range from public through private to personal

documents. Most organizations collect and store a variety of data to support their operations. Such documentary secondary data may include written materials like notices, correspondence (including emails), minutes of meetings, reports, transcripts of speeches and administrative and public records. In addition, documentary data can also include non-written materials such as e.g. voice and video recordings, pictures as well as organizations' databases. (Saunders, et al., 2009, p. 258) Whilst the use of documentary sources, it must be noted that documents are not deliberately produced for the purpose of research, and the researcher needs to be aware of the origins, purpose and the original audience of the documents. Nevertheless, documents are useful as they tell us indirectly about the social world of the people who created them. (Payne & Payne, 2004, p. 61) The ultimate purpose of examining documents is to arrive at an understanding of the meaning and significance of what the document contains (Scott, 1990, p. 28).

Questionnaire is the main method of primary data collection used in this study. Questionnaires are one of the most widely used means of collecting data, distributed to the potential respondents by post, e-mail, as an online questionnaire, or face-to-face by hand. That provide an efficient way of collecting answers from a large sample, because each respondent is asked to reply to the same set of questions. (Saunders, et al., 2009, p. 361) Questionnaires are perceived to be, especially, useful when: the research objectives centre on surveying and profiling a situation (to develop overall patterns), sufficient is already known about the situation under study making it possible to formulate meaningful questions to include in the questionnaire, and willing respondents can be identified, who are in a position to provide meaningful data about the research topic. (Rowley, 2014) In case studies, questionnaires are considered to be useful to obtain evidence from a number of people. That provide a convenient way to gather information in a consistent and comparable way. (Ryan, et al., 2002, p. 154)

The research questionnaire can range from highly structured to unstructured. A semi-structured questionnaire is a mix of unstructured and structured questionnaires. It sets the agenda i.e. structure, sequence and focus but does not presuppose the nature of the response. The list of questions that make up the questionnaire may be open or close ended. An open ended question is one in which possible responses are not supplied in advance. Each respondent writes the answer to the question in their own words. Therefore, these kind of questions are very useful for exploring issues concerning beliefs, attitudes, and practices. On the contrary, a close ended question usually provides a set of responses or options from which a respondent indicates his/her choice. Particularly

useful, when the study topic concerns factual issues, or is a familiar one with a limited range of responses. (Cohen, et al., 2007, pp. 320-321)

As a complementary method, participant observation is used to collect primary data. Participant observation is qualitative and the emphasis is on discovering the meaning people attach to their actions. In this method, the researcher participates in the lives and activities of those whom are studied and attempts to understand what is going on in a wide range of social settings. (Saunders, et al., 2009, pp. 288-290) This process allows researchers to learn about the activities of the people under study in the natural setting through observing and participating in those activities. Dewalt & Dewalt (2002) believe that the goal of using participant observation is to develop a holistic understanding of the phenomena under study, as objectively and accurately as possible given the limitations of the method. They suggest participant observation to be used as a way to increase the validity of the study, as observations may help the researcher to have a more comprehensive understanding of the context and phenomenon under study.

The degree to which the researcher involves himself/herself in participation in the research under study makes a difference in the quality and amount of data he/she will be able to collect. In the complete participant role the researcher is a member of the group being studied, who conceals his/her researcher role from the group to avoid interfering with the normal activity. In the participant as observer stance, the researcher is a member of the group being studied, and the group is informed about the research activity. The observer as participant stance allows the researcher to participate in the group activities as desired, yet the main role of the researcher in this stance is to collect data, and the group being studied is aware of the researcher's observation activities. The opposite role to the complete participant is the complete observer, in which the researcher is completely hidden not taking part in the activities of the group. (Saunders, et al., 2009, pp. 293-294) In this study, the researcher works in the case study organization but isn't a member of the group studied, so participant observer stance is the closest to the complete observer role.

2.2 Reliability and validity of the research

Validity and reliability are key aspects of all research. Because, evaluating the quality of research is essential if study findings are to be utilised in practice. In the traditional understanding, rooted in quantitative research, validity is concerned with the integrity and

application of the methods undertaken and the precision in which the findings accurately reflect the study intention, while reliability describes consistency within the employed analytical procedures and replicability of the study finding. (Golafshani, 2003) Although this may be acceptable for quantitative methods, many qualitative researchers disagree such notions to be unlikely appropriate. Therefore, these concepts should be reconsidered in the qualitative research paradigm.

Lincoln and Guba (1985) offer alternative criteria for demonstrating rigour within qualitative research, namely truth value or credibility, consistency or dependability, neutrality or confirmability, and applicability or transferability. Table 1 outlines the differences between quantitative and qualitative terminology and criteria used to evaluate rigour of research findings.

Table 1. Terminology and criteria used to evaluate rigour of research findings (Golafshani, 2003; Lincoln & Guba, 1985)

| Quantitative research | Alternative terminology associated with qualitative research |
|---|---|
| <p>Validity: The precision in which the findings accurately reflect the study intention.</p> <p>Reliability: The consistency of the analytical procedures and replicability of the study findings.</p> <p>Generalisability: The transferability of the findings to other settings and applicability in other contexts.</p> | <p>Truth value (or credibility): Confidence in the ‘truth’ of the findings to clearly and accurately presents participants’ perspectives. Noting that multiple realities exist; the researchers’ outline personal experiences and viewpoints that may have resulted in bias.</p> <p>Consistency (or dependability): Relates to the ‘trustworthiness’ and whether findings can be repeated. Dependent on the researcher maintaining a ‘decision-trail’; that is, the researcher’s decisions are clear and transparent.</p> <p>Neutrality (or confirmability): The degree to which study findings are determined by respondent and research conditions, not biases, motivations, interests or perspectives of the researcher.</p> <p>Applicability (or transferability): The applicability of findings to other contexts, settings or groups.</p> |

In case study research, the interpretations of the researcher and his or her relation to the subject matter is an essential element of the case. Hence, it is important to know the researcher has adopted appropriate and reliable research methods, called procedural reliability. Meaning the research has good design, which addresses clearly specified

research questions, a comprehensive research plan and all evidence is recorded coherently and analysis is documented. This demonstrates that the case study findings are reliable. In addition, in case study research the contextual validity, indicates the creditability of the study evidence and the conclusions drawn. This can involve assessment of various elements; pieces of evidence, particular sources of evidence, researchers interpretations, alternative theories or even alternative methodologies. (Ryan, et al., 2002, pp. 155-156)

Triangulation is a typically used strategy for improving the validity and reliability of research or evaluation of findings. Triangulation may take several forms, but commonly It refers to the employment of two or more data sources, methods, investigators, theoretical perspectives and approaches to analysis in the study of a single phenomenon and then validating the congruence among them. The major goal of triangulation is to reduce the disadvantages inherent in the use of any single approach using a variety of approaches to confirm each other. (Scandura & Williams, 2000) Triangulation is a primary strategy that supports the principle in case study research to view and explore the phenomena from multiple perspectives (Baxter & Jack, 2008).

3 Management accounting and decision-making

In this opening chapter of the literature review, we begin by considering the roles of accounting and decision-making independently to clarify the concepts. We shall identify the nature of accounting and its main functions, discuss managerial decision-making, the decision-making process, and the ways in which management accounting information can support decision-making. To conclude the chapter, we will review the concept of the knowing organization. In the subsequent chapter, we will define the relationship among data, information, and knowledge. Review the progression of knowledge considering the relevance for a decision setting. Discuss management reporting process and objectives, including effective reporting principles and qualities of reports required to support decision-making. The purpose is to build a substantial conceptual framework for understanding the role of management accounting in decision-making and why an effective management reporting process is vital to support informed and efficient decision-making.

3.1 The nature and role of accounting

Business is not directly about accounting, it is about markets, people and operations. However, accounting is closely implicated in all of the related decisions, because it is the financial representation of the business activity. (Collier, 2003, p. 1) That can be seen, as a service activity, which uses words and symbols to communicate financial information. Often called the 'language of business', which communicates economic information to people who have an interest in an organization. (Drury, 2008, p. 6) In the organization, the major purpose of the use of accounting information is seen to be the minimization of risk, failure and uncertainties and also to stay ahead of competitors (Nnenna, 2012).

As a profession, accounting has evolved in response to society's need for economic information to help people make decisions. During the course of its evolution, accounting has undergone many changes in its concept, convention, policies and procedures. Over the years, as well many definitions have been formulated by the professionals to keep up with the changing socio-economic setting. But a frequently quoted definition of accounting that captures also the theme of this study well is the one formulated by the American Accounting Association in 1966, as follows:

"Accounting is the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information (AAA, 1966, p. 1)."

This is an important definition because it acknowledges, that the general role of accounting is to help people make informed business decisions and recognizes accounting is a process concerned with capturing business events, recording their financial effect, summarizing, reporting and interpreting the results (Collier, 2003, p. 3).

Traditionally, accounting is seen to fulfil three functions: scorekeeping, attention-directing, and problem solving. Scorekeeping function deals with capturing, recording, summarizing, and reporting financial performance. Attention-directing means the interpretation of business performance to give a signal to draw the attention of managers, particularly for i.e. to the comparison between actual and planned performance. In the problem solving role, accounting assists in identifying the best choice from a range of alternative actions, by showing the relative pros and cons. (Collier 2003, 4-5)

It is generally recognised, that accounting fulfils two distinct roles: a 'stewardship' and a 'decision-usefulness' role. The focus has traditionally been more on providing a stewardship, meaning a report on the status of transactions for the period, including position at the period beginning, period transactions and the status at the end of the period. More recently, the focus has seen to be shifted towards a way of assisting a wide range of users to make informed decisions about the allocation of scarce resources. (Atrill, et al., 2014, p. 3) Considering the theme of this study, this decision-making perspective of accounting plays a key role and it will shape the way we deal with each topic.

Accounting is an umbrella term and it can be divided into several areas of activity. The main distinction is namely that between financial accounting and management (i.e. managerial) accounting that reflects the internal and external users of accounting information. Financial accounting (i.e. external reporting) is concerned with reporting general purpose information in the form of published financial statements and other reports to users external to an entity in order to help them make sound economic decisions about the entity's performance and financial position. In contrast to, management accounting (i.e. internal reporting) focuses mainly upon the needs of internal managers of an organisation to help them make better decisions and improve the efficiency and effectiveness of existing operations and make future plans. (Drury, 2008, p. 7; Hilton, 2009, p. 13) The focus of this study is in the latter, namely management accounting.

The distinction between management and financial accounting, depicted in Table 2, can be identified in reference to; (1) the main users of the reports, (2) the regulation, (3) the source of data, (4) the nature of the reports and range of information, and (5) the reporting interval.

Table 2. The major differences between managerial and financial accounting (Hilton, 2009, p. 13; Atrill, et al., 2014, p. 7 to 8)

| | Managerial Accounting | Financial Accounting |
|-----------------------------|---|---|
| Users of Information | Management, within the organization | Interested parties, outside the organization |
| Regulation | Unregulated, since intended only for management | Regulated, must confirm with generally accepted accounting principles |
| Source of Data | The organizations basic accounting system, plus various other sources as applicable | Almost exclusively drawn from the organizations basic accounting system |

| | | |
|---|--|---|
| Nature of reports and range of information | Often specific purpose reports. Reports often on subunits within the organization, such as departments, divisions, geographical regions or product lines, with considerable detail to help with particular decision. Based on a combination of historical data, estimates, and projections of future events. | General purpose financial reports. Reports on the enterprise in its entirety, with a broad view of the position. Focus almost exclusively on historical transaction data. |
| Reporting interval | Reports may be produced on request as frequently as required by the managers. | Reports are produced in accordance to a routine reporting cycle. |

Management accounting has in response to the changing nature of the global economy reinvented itself many times over. Thereby, it has undergone many changes in focus, techniques, functions and roles. Despite of the continuous evolvement, a constant theme in management accounting that has remained the same is the role to provide what managers need and want. (Allot, et al., 2000) Thus, it has become an integral part of the management process by providing critical information for managers who must plan, control and decide in an evolving business environment, highly competitive, characterized by imperfect information, different objectives and control problems within the organization. (Crețu & Gheonea, 2011) That can be described as the process of identifying, measuring, analysing, interpreting, and communicating information in pursuit of an organization's goals (Hilton, 2009, p. 4).

This business centred approach of management accounting has over time led the emphasis of the function to move beyond its traditional concern with a narrow range of numbers to incorporate wider issues in management, to develop towards a strategic business partner role. This shift in focus is presented in the Institute of Management Accountants (2008) definition of Management Accounting as follows:

“Management accounting is a profession that involves partnering in management decision-making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy (IMA, 2008).”

This development towards a strategic business partner, indicates that the information provider role of a management accountant must be more diverse across the organization's information value chain. Instead of the traditional role, often interpreted as centred

on the lower end of the value chain. Hence, the role for management accountants has shifted in two respects with regard to the information value chain, shown in Figure 3: to (1) provide the conceptual framework for converting data into information and (2) fulfil the role of enabler and strategic business partner along the entire information value chain. (IMA, 2008)

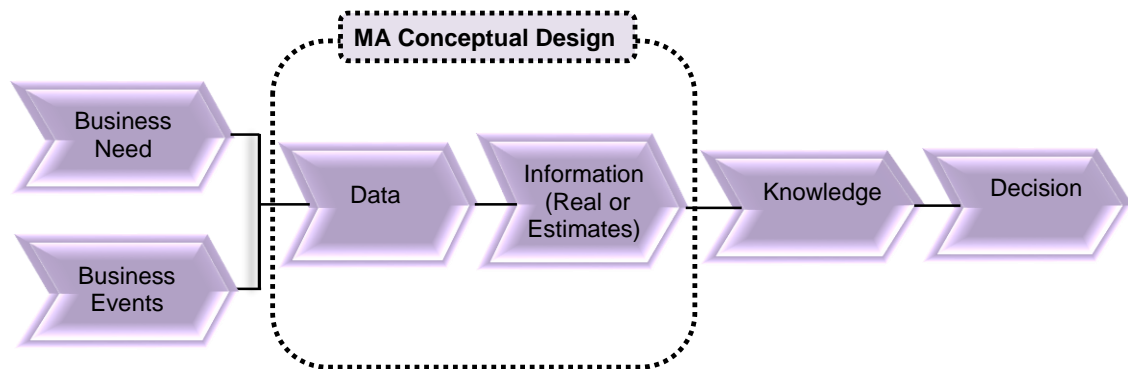


Figure 3. Information value chain
(IMA, 2008)

Most of the recent developments in management accounting are best considered under the umbrella of strategic management accounting, which can be broadly defined as the use of management accounting systems to support strategic decision-making. (Tillman & Goddard, 2008) According to Roslender and Hartb (2003), best understood as a generic approach to accounting for strategic positioning defined by an attempt to incorporate insights from management accounting and marketing management within a strategic management framework. Which aims to provide information that will support the strategic plans and decisions made within a business (Atrill, et al., 2014). The role seen to be, as described by Puolamäki (2007), to support the management team decision-making concerning the implementation of strategic change and challenging the predominant way of carrying out activities in an organisation.

Roselender and Hart (2003) contend that strategic management accounting is not only about making management accounting more “strategic”, but also about bringing more benefits to an organisation. However, it does not break away from the existing management accounting, as in fact both generally offer similar functions at an operational level. But the strategic management accounting endeavours to develop these ideas and to refine them, thus aiding improvement in the performance of such organizations at a strategic level to be a better tool for rational decision-making. (Shah, et al., 2011) Wilson and

Chua (1993) present ten key differences between management accounting and strategic management accounting as shown in Table 3.

Table 3. Ten key differences - traditional and strategic management accounting (MA)
(Wilson & Chua, 1993)

| | Traditional MA | Strategic MA |
|----|---------------------------|-----------------------------------|
| 1 | Historic | Prospective |
| 2 | Single Entity | Relative |
| 3 | Introspective | Out-ward looking |
| 4 | Manufacturing focus | Competitive focus |
| 5 | Existing activities | Possibilities |
| 6 | Reactive | Proactive |
| 7 | Programmed | Un-programmed |
| 8 | Data orientation | Information oriented |
| 9 | Based on existing systems | Unconstrained by existing systems |
| 10 | Built on conventions | Ignores conventions |

The strategic element of management accounting requires enhanced intelligence, to provide information relevant to support the strategic decision-making and the strategic management processes within organisations. It is the role of the management accounting system i.e. the accounting process that can, viewed as part of the organizations' total information system, provide such economic information to meet the decision makers' data demands.

3.1.1 Accounting as an information system

According to Collier (2003, p. 4) accounting is a collection of systems and processes used to record, report, and interpret an economic entity's business transactions, which provides in financial terms an explanation or report about the transactions of an organization. That can be simply described, as the process of recognizing, evaluating and communicating information to allow informed judgements and decisions by users of the information. This is to say that accounting information is valuable to those who need to make decisions and plans about business and control the businesses. (Atrill, et al., 2014, p. 3) Thus, the key aspects of accounting are identifying the key financial components of an organization, measuring the monetary values of these to represent a true and fair

view of the organization, and communicating this financial information in a way useful to the users of that information (Black, 2005, p. 2).

In other words, accounting is basically a process in which input data converts into output information. That viewed as an information system involves the following four sequential stages shown in Figure 4 (Atrill, et al., 2014, p. 6):

1. Identifying and capturing relevant financial information
2. Recording the information collected in a systematic manner
3. Analysing and interpreting the information collected
4. Reporting the information in a way that meets the users' needs



Figure 4. Accounting as an information system
(Atrill, et al., 2014)

The first two stages are related to the preparation and the last two with the utilization of information collected. Considering the decision-making emphasis of this study, we shall focus on the latter two elements of the process – analysis and reporting of the financial information. Because we are concerned with, how information is used by and is useful to decision makers, rather than with how it is collected and recorded.

3.1.2 Accounting as an service function

Considering that accounting processes or gathers and studies “raw data” and converts it into suitable information required in the process of decision-making, we may also describe it as a service function, providing financial information to the users i.e. ‘clients’. (Zager & Zager, 2006) The quality of the service provided determined by the extent the

information is suitable to the needs of the various clients. To be useful, the information needs to meet certain qualities illustrated in Figure 5.

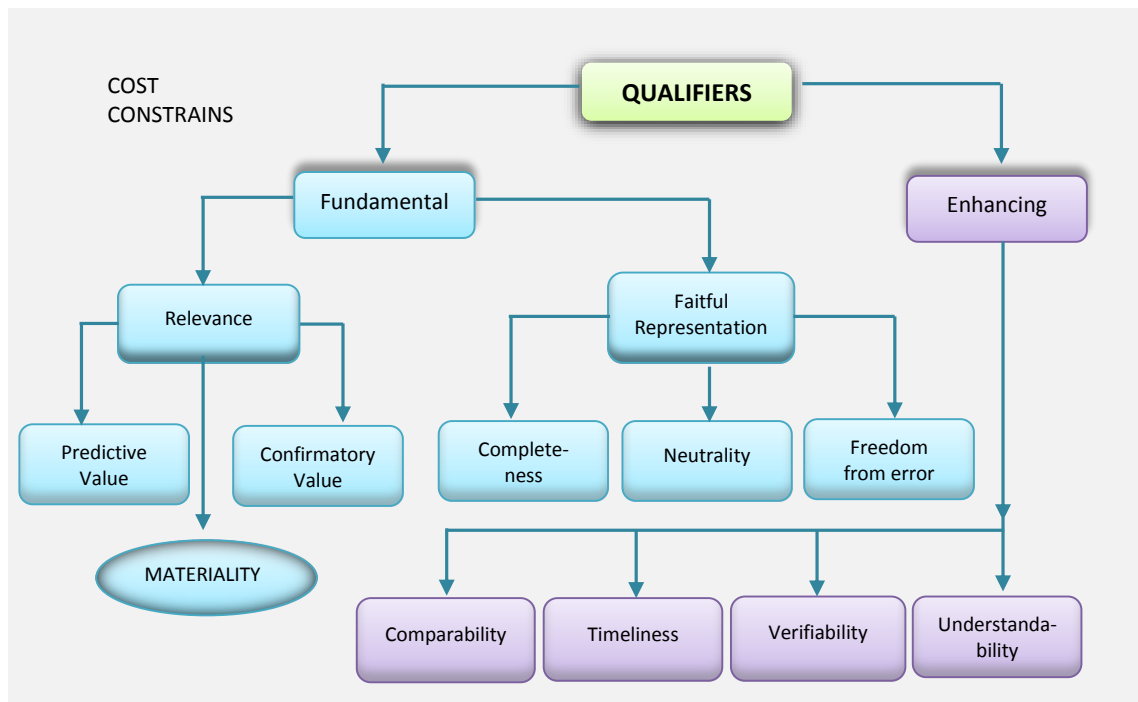


Figure 5. The characteristics that influence the usefulness of accounting information (Atrill, et al., 2014, p. 5)

In particular the information needs to meet, the fundamental qualities of relevance and faithful representation, to have materiality – potential to alter the decisions that users make. The relevance means information is able to influence decisions, having predictive and/or confirmatory value. To be faithful representation, the information should represent what it is supposed to being complete, neutral, and free from error. Additionally, there are other qualities that, if present, can enhance information usefulness: comparability to help identify similarities and differences between items of information; verifiability to assure a faithful portrayal; timeliness to be produced in time; and understandability to be presented clearly and concisely. However, it is worth to note these qualities don't make information useful, they only can enhance information that is already relevant and faithfully represented. In addition to the characteristics described above, the balance between cost and value needs to be noted. This means in theory, only accounting information should be produced if the cost of providing is less than the value to be derived from its use. (Atrill, et al., 2014, p. 3 to 5)

The benefits of quality information that meets these criteria may contain enhanced decision-making, customer service, product/service quality, productivity, reduced staffing and so on. However, quantifying the benefits of information generally tends to be more difficult than quantifying the costs, as it includes making judgement and often the benefits of information are more qualitative, like improved knowledge about customers, competitors and the markets. (Collier & Agyei-Ampomah, 2009, p. 243)

Theoretically, the Figure 6 visualizes how the total value of information received by the decision maker is expected to eventually decline. The broken line indicates the optimal level of information provision, the point at which the gap between the value of information and the cost of providing that information is at its greatest. (Atrill & McLaney, 2009, p. 19)

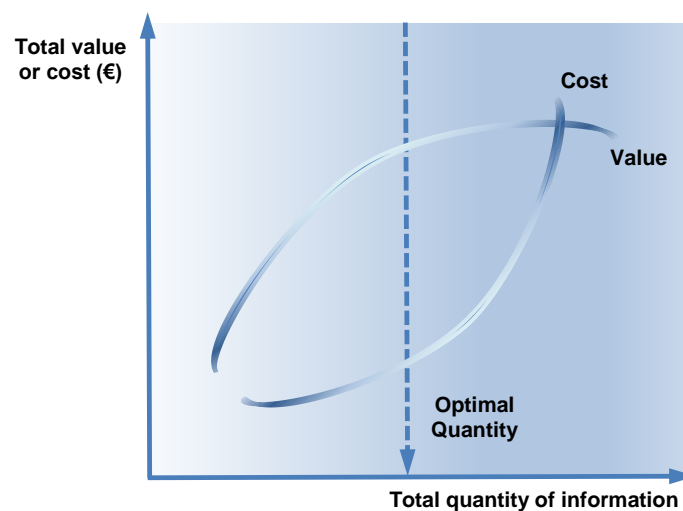


Figure 6. Cost and value relationship in providing management accounting information (Atrill & McLaney, 2009, p. 19)

Beyond this optimal point, each additional piece of information will cost more than the value of having it. This is the point of diminishing marginal returns, where increasing the amount of information further provides little additional benefit. Explaining why this shall happen is not that evident, perhaps as additional information becomes less relevant, or because of the problems that a decision maker may have in processing the sheer quantity of information provided. (Atrill & McLaney, 2009, p. 19)

In spite of this notion, it is clear information is indispensable for decision-making in any business organization to ensure the success and survival of an organization. But the

information must meet the three criteria set by Emery (1969, p. 91) to be valuable for managers, only if it can:

1. Help reduce the future uncertainty
2. Affect the respective decision
3. Help 'sensitively' change the consequences of a decision.

3.2 Decision-making in organizations

Presenting management accounting as a fundamental part of management and a service of decision-making requires that we describe the conception of management accounting and the management functions in the context of decision-making. But before discussing what decision-making is, let us define what a decision is, because decision-making is a process of deciding. Traditionally, a decision is stated to be a choice of the course of action leading to a certain desired objective. This suggests, decision-making is a non-random activity culminating in making the selection of one out of multiple alternative courses of action. (Burstein & Holsapple, 2008, p. 26)

Decision-making is part of our everyday life and we all need to make decisions either consciously or un-consciously at work and in our personal life. We make decisions and/or contribute to the decision-making individually and/or as group. These decision we make may be based on facts, experience and/or intuition. Fundamentally, every decision has hidden within it a guess about the future. Because when solving a problem or achieving a goal, we estimate the situation and then anticipate if we will achieve our desired objective by taking a certain action (Burstein & Holsapple, 2008, p. 4). The forming of preferences, identities, rules, situations, and expectations all involve making sense out of a confusing organisational world. Hence, as organizations make decisions, they transform their preferences and their identities and shape the world they interpret. (Shapira, 2010, p. 20) Therefore, as Greenberg & Baron (2008) state making decisions is one of the most important and critical activities of organizations, because organizations as systems build themselves up by making decisions.

Decision-making and its role in organizations can be viewed in a number of ways. The decision-making theory used in this study will focus on a combination of two disciplines: managerial decision-making and knowledge management. The aim of the theory is to support the study findings and informed managerial decision-making.

3.2.1 Managerial decision-making

Organizations are made of people – people are the organization. Accordingly, it is important to understand that people are the ones who make decisions in an organization. According to Shapira (2010), within any organization humans after all create the roles and responsibilities, structures, processes and procedures that encounter decision-making and define decision-making culture of that organization. Having this in mind decision-making in an organization can be described as a coherent and rational process in which alternative interests and perspectives are considered in an orderly manner until the optimal alternative is selected. (Shapira, 2010, p. 20) Managers are in the organizations' the people who have to take most of the decisions, both day-to-day and strategically, about how the scarce resources within their control are to be used to reach the organizational goals. Thus, making decisions is considered to be one of the most crucial management activities, defined as the choice making process among several activities. (Greenberg & Baron, 2008, p. 380)

A decision is the result of a process, which steps are as important as the final choice. It is a choice made at a time, in a given context, from alternatives, to stimulate actions of variable size and duration. That is essential for an organization's survival and development, since it is prior to any action (Socea, 2012). The objective of this decision-making process is to move the situation from the current state to some desired future state. Considering the often complex decision-making context, this process often requires a commitment to embark on a journey toward an uncertain future. Thus, to be successful, the organization must have the capacity and internal support mechanism required to carry out this journey (i.e. the decision strategy). (Burststein & Holsapple, 2008, p. 11) Managers are also expected to be capable to analyse and interpret accounting information so that decisions are made understanding the financial implications of the decisions.

3.2.1 The decision-making process

The decision context and type can vary and the outcome is often dependant on the decision maker. Although, in sequential models there are some common steps that can be identified included to nearly every decision. These steps can be applied as a framework for the decision-making process that are useful regardless of the decision's type, context and maker.

Drury (2008) describes the decision-making process, visualised in Figure 7, as comprising of five stages which belong to the decision-making (or planning) process, followed by two final stages which represent the control process. As the first step in the planning process management needs to identify the goals and objectives. These shall work then later as the guiding direction that enable the decision makers to assess the attractiveness of the alternative courses of actions. After data is collected about the possible alternatives, the course of action that is seen to best satisfy the objectives of an organization will be chosen and implemented. Following the decision-making process, the control process should be in place to measure and correct the concrete performance of the alternatives chosen. (Drury, 2008, pp. 8-11)

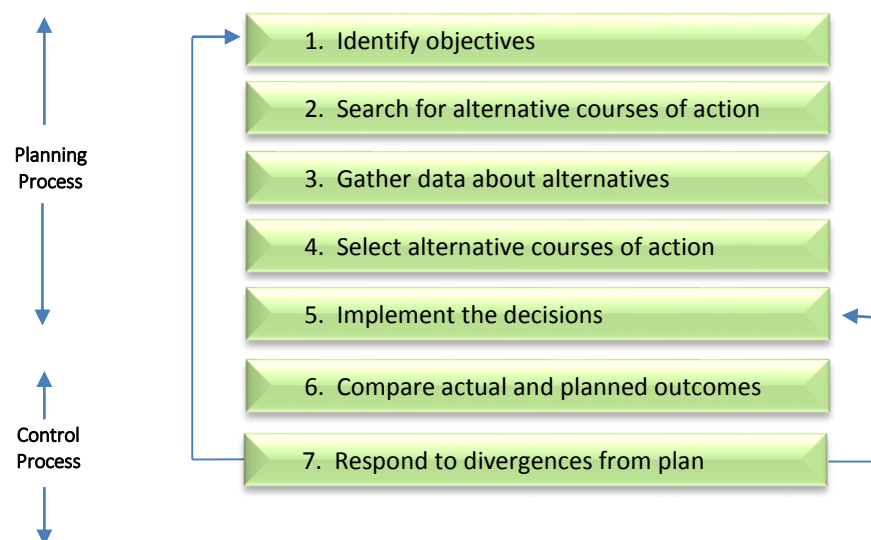


Figure 7. The decision-making, planning and control process (Drury, 2008, p. 8)

An intuitive sense of good decision-making seems to be natural for some managers. However, the reality tends to be that consistently good decision-making is rarely based on intuition only. But to support is required diligent accumulation and evaluation of information. This is where management accounting comes in, providing the information needed to fuel the decision-making process.

3.2.2 Objectives of managerial accounting activity

Business value results from good management decisions. These decisions must occur across a spectrum of activities, in other words, related to three interrelated management

processes: planning, directing, and controlling shown in Figure 8. Planning is about thinking ahead, selecting a course of action to reach desired outcomes. (Walther & Skousen, 2009, p. 11) Planning involves converting goals and objectives into the specific activities and resources that are required to meet the set goals and objectives (Drury, 2008, p. 19). For a plan to come to life, it requires initiation and direction of numerous actions, i.e. it needs to be realized into action. Since things rarely go exactly like planned, the management must exercise control to monitor and adjust for deviations. (Walther & Skousen, 2009, p. 16) This control is the process of ensuring that the actual outcomes are in line with the plans. Performance needs to be also measured and compared to the targets on a periodic basis. (Drury, 2008, p. 19). Correct execution of each of these activities culminates in the creation of business value. Whereas, conversely failure in these activities is a roadmap leading to business failure. (Walther & Skousen, 2009, p. 11)

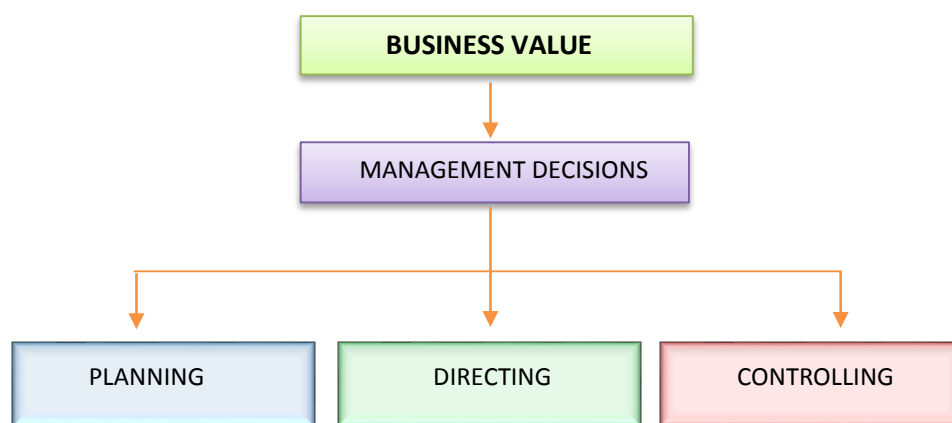


Figure 8. Managerial decisions: planning, directing, and controlling

The roles of management accountants vary from one organization to the next, depending on factors such as the size of an organization, the type of an organization, culture, industry and others. Then again, these factors change from time to time, the roles of management accountants in the past are not the same nowadays, because the business circumstances are different. Notwithstanding, such differences do not change the basic roles of management accountants, but influence and determine the complexity of the roles. (Ahid & Augustine, 2012)

Hilton (2009, p. 6 to 7) states managerial accountants' play an important role and add value to their organization by pursuing five major objectives:

1. Providing information for decision-making and planning
2. Assisting managers in directing and controlling operational activities
3. Motivating managers and other employees towards the organization's goals
4. Measuring the performance of activities, subunits, managers, and other employees within the organization
5. Assessing the organizations competitive position, and working with other managers to ensure the organizations long-run competitiveness in its industry

It is the role of the management accountant to make available for managers feedback information in the form of periodic reports, suitably analysed, to enable them to determine if operations for which they are accountable for are running according to plan and recognize those activities where corrective action is required. In particular, the management accounting function should deliver economic feedback to managers to support them in controlling costs and improving the efficiency and effectiveness of operations. (Drury, 2008, p. 19).

Thus, the objective of implementing management accounting in an organization is to provide managers relevant information to allow them to effectively evaluate the organization's actual performance, to quantify the goals and objectives in budgets and medium and long term plans, to improve decision-making at both operational and strategic level, and to take corrective actions to comply with the set performance objectives. (Crețu & Gheonea, 2011) In other words, management accounting is seen as an information provider for internal business processes, management planning and control, resource management and creation of value through effectively used materials. (Ahid & Augustine, 2012)

In particular, Atrill & McLaney (2009) identifies four broad areas, where management accounting information is necessary to support managers in decision-making: developing long-term plans and strategies, performance evaluation and control, allocating resources and determining costs and benefits (set out in Figure 9.).

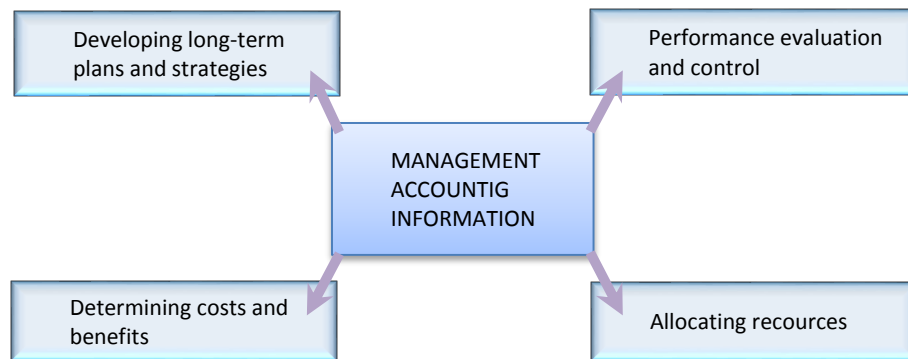


Figure 9. Management decisions requiring management accounting information (Atrill & McLaney, 2009, p. 23)

The management accounting information is considered to be useful in developing appropriate objectives, long-term plans and strategies, help in reviewing the performance of the business against the set criteria and form the basis for deciding between the various strategies on offer. Additionally, information is used to control and allocate the limited business resources in an efficient and effective manner to reach the optimum level of output, mix of products and the appropriate type of investments. Including details weighing the costs against the benefits, management accounting information also helps to make decisions on a particular course of action, i.e. producing a new product or closing down a department. (Atrill & McLaney, 2009, p. 23)

Noting these considerations, any manager leading a business needs management accounting information that allows to shape the future, to transform it from an unknown, uncertain and risky into a more predicted and planned one, with an uncertainty and risk understood and evaluated in financial terms. As Choo (2003) states organizational knowing applies, when the principles of information use are connected to each other to constitute a larger network of processes through which the organization: constructs shared meanings about its actions and identity; discovers, shares, and applies new knowledge; and initiates patterns of action through search, evaluation, and selection of alternatives. Knowledge can and should be evaluated by the decisions or actions it leads to. As better knowledge can lead, for example, to wiser decisions about strategy, competitors, customers, distribution channels, and product and service life cycles. (Davenport & Prusak, 2000, p. 6)

3.3 Knowing organization

Nonaka, et al. (2008) argue knowledge is not a static substance or thing, but an ever-changing process of interaction in an ever-growing field of relations. Knowledge is created from the synthesis of thinking and action by individuals interacting both within and beyond organizational boundaries that generate the basis for creating new knowledge again, through the knowledge creation spiral. It is the people's values and value-based decisions that determine the way of life in an organization and the value the organization creates in the era of the knowledge society. (Nonaka, et al., 2008, pp. 3,18)

Without having a clear understanding of the organizational and human processes through which information becomes selected and expressed as insight, knowledge, and action, an organization is unable to thrive and grow in an increasingly complex environment. According to Choo (2006), "knowing organization" is the one that links the strategic information processes of sense making, knowledge creating, and decision-making into a continuous cycle of learning and adaptation to formulate strategy and select course of actions. We can visualize the interactions of these processes, as shown in Figure 10, to see that the outcome of information usage in one mode provides the elaborated context and the expanded resources for information usage in the other modes.

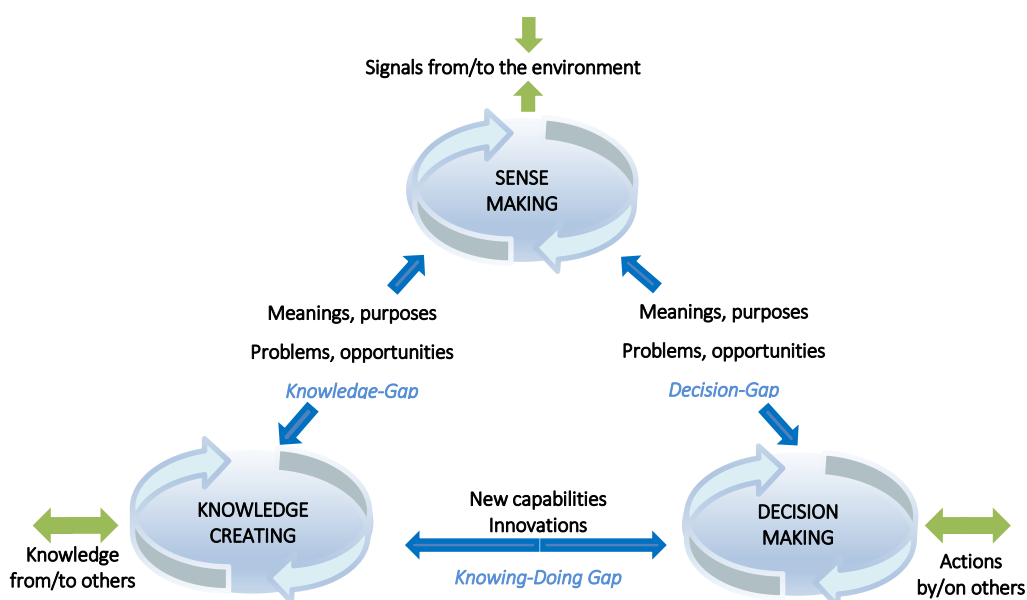


Figure 10. The knowing cycle
(Choo, 2006)

Since the organizations face a dynamic and uncertain world, organizations use information first to make sense of changes in their environment to construct meaning and build an understanding of what is happening to the organization and what the organization is doing. Market forces and dynamics control the organization's success or failure. Fiscal and legal structures ground its identity and range of influence. Public opinion and societal norms shape its role and reach. The critical dependencies between an organization and its environment require the organization to be constantly alert of changes and shifts in its external relationships. Changes in the environment continuously generate signals and cues. Unfortunately, these messages can be often vague and compatible with multiple interpretations. Hence, making it a crucial task of management to discern the most significant changes, interpret their meaning, and develop appropriate responses. This is called sense making, of which the short term goal is to build a shared understanding that allows for continuity of operations and the long-term goal is to ensure that the organization adapts and continues to thrive in a dynamic environment. (Choo, 2006, pp. 1 to 2, 5)

The second arena of strategic information use is when organizations generate new knowledge. This is a process that allows an organization to create or acquire, organize and process information in order to generate new knowledge through organizational learning. This process is triggered by knowledge gaps that stand in the way of solving a technical or task-related problem, developing a new product or service, or taking advantage of an opportunity. The knowledge an organisation possesses can be divided into three categories: tacit knowledge embedded in the expertise and experience of individuals and groups; explicit knowledge codified in organizational rules, routines, and procedures, or cultural knowledge expressed in the assumptions and beliefs, and norms used by members to assign value and significance to new information or knowledge. An organization over time develops its own tightly integrated bundle of tacit, explicit and cultural knowledge that constitutes its core capability. As an organization exists because of its ability to integrate and channel these sets of knowledge into activities and outcomes that are meaningful and valuable. Capable to grow when it is able to continuously refresh its knowledge and extend its capabilities. (Choo, 2006, p. 2; Choo, 2003)

The third strategic information process, decision-making is triggered by a choice situation, an occasion in which the organization is expected to select a course of action. Decision makers are expected to search for alternatives, evaluate consequences, and com-

mit to a course of action. In theory, this choice is to be made rationally based upon complete information. But in practice, organizational decision-making departs from the ideal, as individuals are limited in their ability to search and process information in a completely rational manner. The principals, rules and routines structure in an organization, reduce the uncertainty and complexity of the choice-making process. To be an effective organization, decisions are vital because they lie closest to action and are intended to enable the organization to achieve its goals. (Choo, 2006, p. 2)

The above definitions and perspectives indicate a continuous flow of information maintained between sense-making, knowledge creating, and decision-making. Sense making builds the context, the frame of reference for knowledge creation and decision-making. Knowledge creation expands organizational capabilities and introduces innovations. Decision-making converts beliefs and capabilities into commitments to act. Allowing the knowing organization to possess in depth, enlightened and well announced information and knowledge, and use special capability to create knowledge, thus enabling that it can be controlled with intelligence and creativity. (Choo, 2006)

If a company can truly leverage its knowledge, it should be as stated by Thierauf (1999) able to accomplish three advantages. First, knowledge should make the organization more responsive to the rapidly changing competitive landscape, able to exploit new opportunities more quickly and reduce competitive vulnerabilities. Second, knowledge should allow managers and employees to evaluate a company's critical success factors more thoroughly. Third, knowledge should enhance the internal efficiency and productivity of the organization, including better coordination of the organization's functional components. (Thierauf, 1999, pp. 13-14) Making such an organization well informed, alert, aware of threats and opportunities, prepared to develop in a dynamic environment, able to anticipate and adapt to changes already in an early stage and analyse the skills and expertise of its members to learn and innovate. (Choo, 2006)

4 Information and management reporting

Decision-making is related to the flow of information. Development in information technology have allowed businesses to collect, sort, and deliver almost limitless amounts of data, creating massive amounts of information in various formats. Making it evident the problem is not lack of data, instead the challenge for the management reporting process

is to synthesize and structure all the data into relevant, actionable information and then deliver it to the right person at the right time to support informed decision-making. This means today, more than ever, financial professionals are being challenged by their company's executives, managers, and staff to provide more effective and meaningful management reporting.

4.1 Defining data, information, and knowledge

In order to continue the discussion with management reporting and its decision support role, we need to next define the relationship among data, information, and knowledge, to better understand what falls under each in the business context.

We use the concept of knowledge frequently in our everyday language. Sometimes we refer to know-how, while other times we mean wisdom. On many occasions, we even use it talking about information. Thus, part of the challenge of defining knowledge arises from its relationship to the two other concepts, namely data and information. These two concepts are often viewed as lower categories of knowledge. However, the exact relationship varies greatly from one context to another and how simple it may sound, it is important to emphasise that data, information, and knowledge are not interchangeable concepts. Hence, organizational success and failure can often depend on understanding each one, knowing which is required when, what already exists, and what we can or can't do with each.

Data can be defined as a set of discrete objective facts about an event or a process which has little significance alone, e.g. numerical quantities or other attributes derived from observation, experiment, or calculation (like cost, speed, time, or capacity). That is in an organizational context most usefully described as structured records of transactions. Making data essentially raw material for information, which is meant to change the way the receiver perceives something to have an impact on a decision maker's judgment and behaviour. (Davenport & Prusak, 2000, p. 2 to 3; Bergeson, 2003, p. 10)

Information comes from the form that data takes as it is arranged and presented in different ways. Information is a collection of data and associated explanations, interpretations and other textual material related to a specific object, event, or process. (Bergeson, 2003, p. 10) Unlike data, information has a meaning – the relevance and purpose. Not only does it potentially shape the person who gets it to make some difference but it has

shape, i.e. it is organized to some purpose having added value. (Davenport & Prusak, 2000, p. 4) As stated by Thierauf (1999, p. 7), information is structured data that is useful to the manager in analysing and resolving critical problems. That is recognised nowadays to be a vital business asset, as quality and timely business information is among a manager's most important resources, which helps to understand the "big picture" and make the right decisions at the right time.

Knowledge derives from information, as information derives from data. Knowledge is the application of information, it allows management to gain a more complete picture, linking the information together with increased understanding. Knowledge is a familiarity, awareness or understanding of someone or something, such as facts, information, descriptions or skills, which is acquired through experience or education by perceiving, discovering or learning. Knowledge is closely related to doing and implies know-how and understanding. The knowledge possessed by each individual is a product of his/her experience, and encompasses the norms by which an individual evaluates new inputs from the surroundings. (Davenport & Prusak, 2000) A definition to help discuss about knowledge in organizations presented by Davenport & Prusak (2000) is as follows:

“Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.”
(Davenport & Prusak, 2000, p. 5)

Thierauf (1999, p. 7) argues information can be turned into knowledge only in the hands of an expert, as it requires expertise to interpret the underlying information structure to derive insight and understanding – the knowledge. Like, for example, the capability required to interpret the organizations financial results. Davenport & Prusak (2000), describe knowledge develops over time and experience refers to what we have done and what has happened to us in the past. This provides a historical standpoint from which to view and understand new situations and events. (Davenport & Prusak, 2000, p. 7)

Knowledge represents a state or potential for action and decisions in a person, organization or a group. That can be transformed in the process of learning, which creates changes in understanding, decision or action. Knowledge is based on information that is organized, synthesized, or summarized to enhance comprehension,

awareness, or understanding. (Bergeson, 2003, p. 10) This progression of knowledge considering the relevance for a decision setting can be illustrated as six states, identified by Van Lohuizen (1986) shown in Figure 11, called data, information, structured information, insight, judgement, and decision. (Burstein & Holsapple, 2008, p. 40)

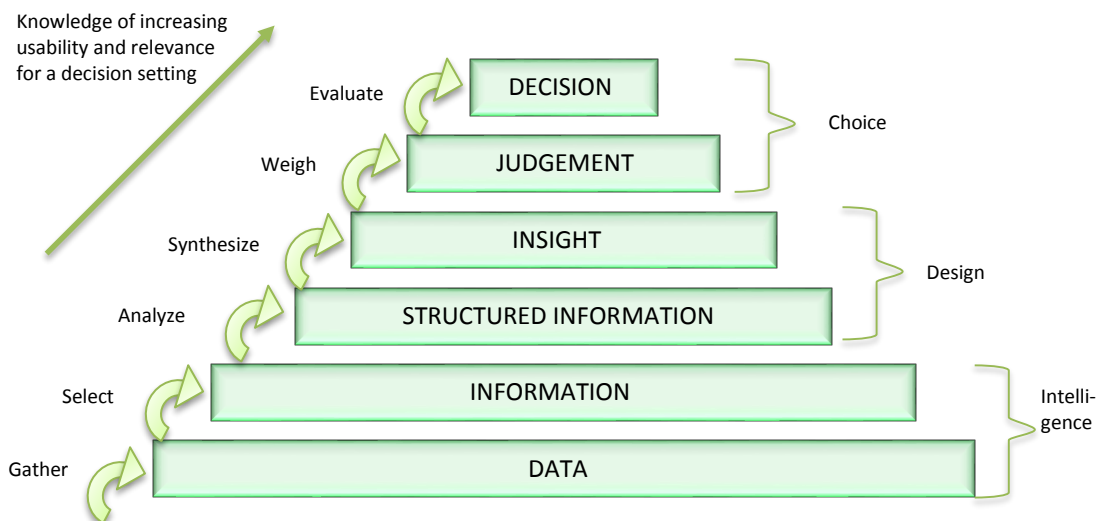


Figure 11. Knowledge as a progression of states (Burstein & Holsapple, 2008, p. 40)

In order to progress from one state to another various operations can be undertaken: selecting from data, analyzing, synthesizing, weighing, and evaluating. This nature of knowledge processing required for state transformations means that these states form a progression from the lowest level, where usability is marginal or potential, to higher levels where usability is clearer and more immediate. In other words, there is an increase in the relevance of knowledge with respect to accomplishing some objective, i.e. reaching a decision. (Burstein & Holsapple, 2008, p. 40 to 41)

An analysis of all aspects of an organization's reported performance and financial condition – complemented with other considerations, including strategy, approach to risk, and capabilities to deliver results - is needed to develop expectations for the creation of value in the longer term. (CICA, 2010)

4.2 Management reporting

A company's success in generating sales, controlling costs, and therefore, operating profitability depends not only on the quality of its basic resources (personnel, equipment,

and techniques), but also on the quality of reports supplied to the management. Because, without an effective reporting process, it is like management is flying blind, forced to adapt to evolving business conditions with little timely or relevant information (Axson, 2010, p. 141).

Management reporting is a systematic process that starts with an event - all events create data. An event may be a call from a customer or an employee arriving at work; they all create data that may be subsequently used for management reporting. (Axson, 2010, p. 141) However, reporting is not the same as data generation. According to Kohler (1985) reporting refers to "a body of information organized for presentation or transmission to others. It often includes interpretations, recommendations and findings with supporting evidence in the form of other reports." In other words, reporting requires summarization of data that will provide useful information to the user. Reporting is the process of communicating information. Management reporting is the process of providing information to the management, an organized method of communicating to each manager all the data required for decisions, when needed and in a tailored form, which supports understanding and stimulates action. (Periasamy, 675) Management reporting covers all activities associated with the reporting of performance measures, events, analysis, and other information to support decision-making. The information reported contains, but is not necessarily limited to, reporting current and prior period results and forecasts of future periods; comparing actual results to any comparison basis (e.g. plan, forecast, or relevant external measures) in variance analysis; calculation and reporting of performance measurements, both financial and nonfinancial; consolidation; and fulfilment of ad hoc reporting requirements. (Axson, 2010, p. 26)

When properly designed, reports serve as an invaluable management function supporting managers to make well informed and timely decisions that help to reach organizational goals. The reporting requirements are a function of the roles and responsibilities of the recipient, the decisions to be made, the goals and plans of the organization, and the actual results achieved in executing those plans (Axson, 2010, p. 26). More explicitly, as the objectives of management reporting are seen:

- To provide the required information of the business to allow its managerial functions of i.e. planning, organizing, controlling, directing, and decision-making to be done efficiently and effectively.
- To ensure the operational efficiency.

- To facilitate the maximum utilization of resources.
- To secure workers' industrial understanding.
- To assist in motivating, improving discipline and morale.
- To help the management make effective decision-making. (Periasamy, 2010, p. 675 to 676)

The form of management reporting can be either oral or a written report. The classification of the written management reports can be done in a number of ways, according to object or purpose, period or function, like the types of reporting shown in more detail in Figure 12. (Periasamy, 2010, p. 678)

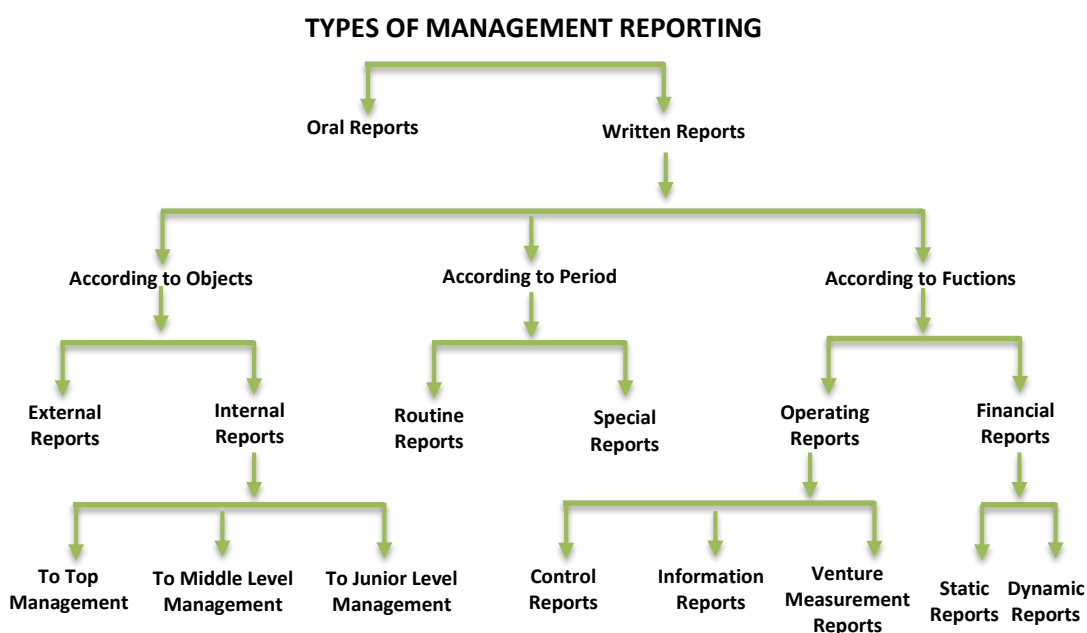


Figure 12. Types of management reporting
(Periasamy, 2010, p. 678)

The production of useful financial information is a complex task and is becoming increasingly so as a result of sophisticated business transactions, ever-changing standards, and increased regulatory requirements. All these factors require a thorough and logical approach to identify all the facts surrounding a transaction and considerable professional judgement to assess how the guidance should be applied. (CICA, 2010)

High-quality information is required to lead everyday business successfully and it is one of the major drivers of sustainable organizational success. As with high-quality business reports, it is evident managers have better ability to make decisions. The best way to

ensure such reports are created is an effective reporting process, wherein all internal and external stakeholders get appropriate high-quality business reports in a timely fashion, as suitable information is crucial to make informed decisions with respect to an organization's capacity to create and preserve value. (IFAC, 2013)

4.2.1 Principles for an effective business reporting process

Concerning the reporting process, IFAC (2013) has published guidance in the form of principles for an effective business reporting process. These principles depicted, in Figure 13, do not prescribe a specific approach, but highlight a number of areas for specific consideration, which represent good practices to ensure effective reporting processes in an organization.



Figure 13. Relation of reporting principles
IFAC (2013)

Management's commitment to effective reporting is stated as the first principle. Senior management is expected to assume a leadership role providing strategic input into and oversight over to make sure that the organization has suitable reporting processes and controls in place, in order to deliver high-quality reports. This requires having adequate

resources to create and maintain the reporting process. Guidance should also be clear related to the appearance of reports to avoid information overload and time wasted preparing and reading unnecessary information. The second principle deals with employing the suitable personnel, defining the roles and responsibilities, and organising collaboration among those involved in the reporting process. The third principle states the organization should develop and implement an effective planning and control cycle for its reporting processes. This should include documentation of the reporting processes containing identified risks and related control. This can consist of reporting or accounting manuals, policies and procedures. (IFAC, 2013)

The fourth principle mentioned is about engaging stakeholders, both internal and external, to understand their information requirements with regard to past, present, and future, to amend the reporting accordingly. The fifth principle is devoted to defining the reporting content and audience, layout, and timing of reports. Once organization has a clear view of the information requirements, these should be then translated into reporting demands to provide different information to different stakeholders reflecting the information needs; it shall not be “one size fits all”. To provide better insights into what drives the business and the opportunities and threats it is dealing with, the reporting needs to be open, transparent, and have a forward-looking orientation to support informed decision-making. The frequency and timing of reporting is also an important issue, and should be planned to meet the stakeholders’ requirements. The requirement for more frequent and timely reporting is a good motivator for organizations to improve their internal reporting. However, providing the reports earlier increases the need for estimates, shortens the time available for analysis and interpretation, and can also increase organizational costs. Therefore, management needs to determine the right balance between using estimates, costs, adequate analysis and interpretation, and the timeliness of reports. (IFAC, 2013)

IFAC’s (2013) sixth principle deals with selecting frameworks and standards, but since the focus of this study is on internal reporting, we shall interpret this principle referring to the need to have adequate and updated internal policies and instruction in place in the organization to support the reporting. The seventh principle is about determining reporting processes, considering what information needs to be captured, processed, analysed, and reported, and how to organize the information processes and related systems for effective reporting and better decision-making. Information technology plays a central role in the process of business reporting and the eighth principle notes the organization

should identify, analyse and select appropriate communication tools to optimize the distribution of reporting information via the various communications channels. The ninth principle states the organization should ensure that reported information is sufficiently analysed and interpreted before it is provided to stakeholders. The tenth principle handles assurance in reports and reporting processes that contributes to accountability, transparency and reliability. The last principle notes the importance of evaluating and improving reporting processes on a regular basis in order to identify and carry out further improvements required for maintaining reporting effectiveness. (IFAC, 2013)

4.2.2 Qualities of reports useful for decision makers

In general, a good report should comprise all the necessary information to facilitate decision-making. Leading the managers to ask the right questions and initiate a chain of actions that will enhance the ability of the organisation to achieve its short- and long-term goals. (Starovic, 2009) As Axson (2010) describes effective management reports should build around three basic principles: content, delivery, and people. This means moving away from a one-size-fits-all approach, making the information recipients needs the starting point of the reporting, and delivering the right information to the right people at the right time.

There are several qualities that are associated with useful information. Relevance, meaning management accounting information must have the ability to influence decisions, i.e. be targeted at the requirements of the individual manager for whom it is being provided and available, when the decision needs to be made. In other words, this means information needs to be pertinent. Accuracy, meaning information must be precise. To have value for the decision maker, relevant and accurate information need to be also timely, that is, available in time. Managers should be also capable to rely upon the information. Meaning it needs to be free from significant errors or bias. A problem often faced though in accounting is, that highly relevant information may not be very reliable or vice versa. (Hilton, 2009, pp. 590-591; Starovic, 2009)

Kumar (2010) complements and introduces that the general characteristics of good reporting are promptness, comparison, consistency, and simplicity. Promptness in reporting means the report should be issued before the information becomes ancient history. This is important and it cannot be really overemphasised, as managers need quick re-

ports to carry out daily operations, even at times sacrificing reliability for speed is accepted, i.e. in cases where complete information is not needed for showing trends. Comparison in reports provides perspective, like current month, last month and the same month of last year, so that managers can evaluate trends in the performance of the business over time and in relation to other similar businesses and review possible deviations needing attention. Consistency is closely related with the principle of comparison in reporting, as it is necessary to present information in the same manner to allow comparison between different reporting periods. Simplicity, another necessity of reporting, means presenting the information in a clear manner to ensure the significance of the information to be understood by the users. In practice, this means elimination of extraneous data, appropriate use of graphs, exact and simple definitions of financial terms, precise use of technical terms, and careful summarisation of operating results.

Consideration of cost shall be also noted, as reporting must be commensurate with the benefits derived not to become an unnecessary drag on the resources of an undertaking. Osborn (1998) points out that the use of simplified accounting information, i.e. information structured around key issues and categories, stimulates productive discussion among managers and more time being devoted to building shared interpretations of results. Hall (2010) notes similarly, that developing knowledge of the work environment is likely to be facilitated by highlighting key events and outcomes, with managers developing their own connections and interpretations, rather than trying to formalise relations via cause-and-effect chains. Furthermore, information needs to be easily comprehended by managers so that they have confidence in their understanding of the underlying data.

As a consequence of the rapidly changing business conditions, management accounting has moved beyond its traditional concern with a narrow range of numbers to incorporate wider issues of performance measurement and management. Shifting the reporting focus, as visualized in Figure 14, from producing necessary reports to keep score of operating results to incorporate broader information to understand relevance, share insights and influence decisions to achieve impact. (CIMA, 2009)

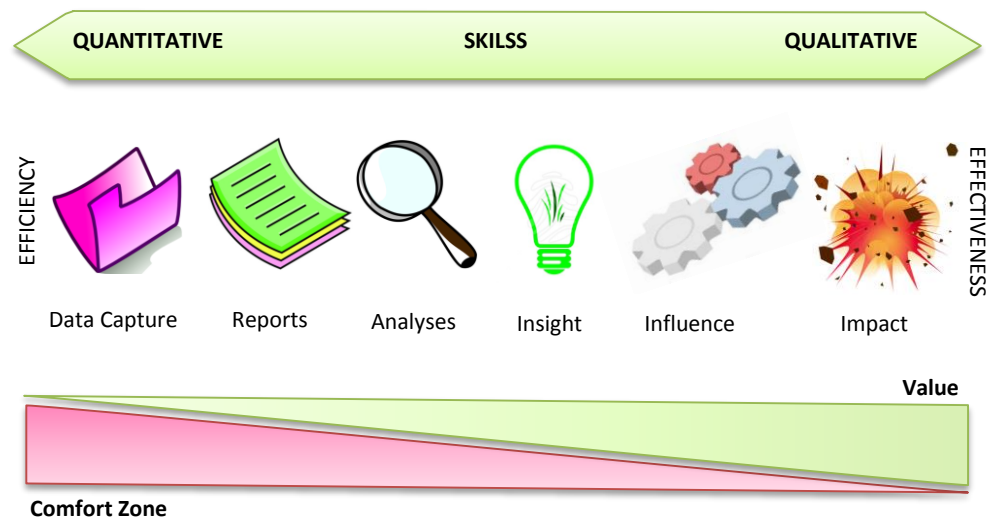


Figure 14. Finance business partnering
(CIMA, 2009)

This shift has taken the management accountants on a journey from many traditional accountants' comfort zone - quantitative roots, where the business imperative was to maximise efficiency, to where the emphasis is on enabling value creation requiring qualitative skills. (CIMA, 2009) The changed requirements have led management accounting from backward-looking control purposes towards the use of forward-looking accounting information for strategic planning and control, and for decision-making (Taipaleenmäki & Ikkäheimo, 2013).

4.3 Considering analytical in the frame of decision-making

For too long, many important decisions have not been based on data, but on the intuition or experience – research suggests up to 40% of major decisions are based not on facts, but on the managers' gut. Sometimes intuitive and experience based decisions may work out well, but in other cases they can leave money on the table if, i.e. products and services are priced on hunches about what the market will bear, not on actual data or people are hired based on intuition, not on analysis of the skills and personality traits that predict an employee's high performance. (Davenport, et al., 2010, p. 1)

However, business analytics is not a new phenomenon. Though it's been around, only recently it is making its breakthrough, as organizations are anchoring in the technically oriented environment. (Laursen & Thorlund, 2010) Where novel business opportunities,

timing, and know-how, as well as, the need to provide fast and effective service due to increased business competition, require rapid and more sophisticated information and data analysis. These requirements challenge management accounting to effectively support the decision-making process. (Schl fke, et al., 2012)

In order to do so, business analytics allows to go beyond traditional reporting and offers a way to deal with increasing complexity, uncertainty, and volatility. Providing an opportunity to effectively support the understanding, exploration, and exploitation of business dynamics and opportunities leading to better decision-making. (Schl fke, et al., 2012) Analytics can also contribute to more objective decision-making by revealing evidence on performance creation and effect relationships (Klatt, et al., 2011).

Therefore, if we want to make better decisions and take the right actions, we have to exploit analytics. But what do we actually mean by analytical, what are the key questions addressed; what kind of data and reasoning does it involve. In modern day business, analytics can be seen as engaging in the use of data, structured or unstructured, with formal analysis to arrive at learnings that help in improving performance in key business domains and making better business decisions (Agrawal, 2014). Considering analytical in the frame of decision-making, we mean the use of analysis, data, and systematic reasoning to make decisions. That begins with anticipating, how information will be used to address key questions across the time and innovation dimensions presented in Table 4. (Davenport, et al., 2010, p. 7)

Table 4. Analytical dimensions
(Davenport, et al., 2010, p. 7)

| | PAST | PRESENT | FUTURE |
|-------------|---|---|---|
| Information | What happened? <i>(Reporting)</i> | What is happening now? <i>(Alerts)</i> | What will happen? <i>(Extrapolation)</i> |
| Insight | How and why did it happen? <i>(Modelling, experimental design)</i> | What's the next best action? <i>(Recommendation)</i> | What's the best/worst that can happen? <i>(Prediction, optimization, simulation)</i> |

The first set of questions presented, in Table 4, addresses the time dimension, past, present and future. All useful questions, that data and analytics can provide information about to answer, but the limitation of these questions is that they don't tell why something happens or how likely it is to recur. Whereas, the second set of question includes insight, necessitating more advanced tools to dig deeper for the answers. Together, these six questions encompass much of what managers need to know about an organization in order to have a comprehensive overview of a problem that needs to be solved and/or decision that needs to be made. Davenport et al. (2010) recommend managers to use this question matrix to challenge existing uses of information, as often moving from purely information-oriented questions towards the later set of questions containing insights is likely to give a much deeper and better understanding of the dynamics of the business and related decisions that need to be made. (Davenport, et al., 2010, p. 7)

Though, analysing the data and having all the information at managers' disposal does not guarantee success in making the right decisions. Good analytics can facilitate better informed managerial decision-making but, however, need to note analytics does not make the decision on behalf of the manager. Davenport et al. (2010, p. 3) argue for an organization to put analytics to work for decision-making the payoffs or benefits are the following:

- Help manage and steer the business, as analytics provide managers tools to better understand the dynamics of their business, anticipate how shifting trends and market conditions will influence business performance.
- Make it easier to identify what is really working, as analytical testing can tell whether an intervention is causing desired changes in business or whether it is simply the result of random statistical fluctuations.
- Leverage previous investments in IT and information to get further insights, faster execution and more business value in many business processes.
- Cut costs and improved efficiencies, as optimization techniques can minimize asset requirements, and predictive models can anticipate changes in the marketplace enabling the organization to adjust quickly to slash costs and eliminate waste.
- Improve risk management allowing more precise metrics.
- Provide a basis for improving decision-making over time, as using clear logic and supporting data to make decisions, makes it easier to examine the process to figure out how to improve it.

Klatt et al. (2011) complement, sensible application of business analytics in practice can add considerable value and improve decision-making. Supporting managers in understanding and structuring their business dynamics. Establishing assumptions and key environmental influences to allow for the testing of strategy strength to help reveal, what can provide valuable insights into future strategic orientation. Improving leveraging efficiency by speeding up task execution and helping to reduce the risk of time-consuming mistakes by identifying previous causes of errors. Supporting learning from changes to improve management's understanding of market and customer behaviour that can be used to anticipate future changes and also help to objectify decisions.

4.4 Information as a competitive asset

As we have described, the way in which organisations across the globe make business decisions is evolving. Consumers are increasingly sophisticated, technology is rapidly evolving, and competition continues to become more global. The advanced business analysis tools and techniques unimaginable a generation ago, offer managers clues to new opportunities to achieve competitive advantage (Fahey, 2009). Across industries, organizations are realizing the many possibilities the quantum increase in the amount of data available to the modern organisation creates. Leading organizations are investing in innovation that leverages the ever-growing opportunities to collect new data, combine external and internal data and apply big data and analytics to outperform competitors. (Marshall, et al., 2015)

Consequently, the need to make the most of organizational knowledge, to get as much value as possible from it, is greater now than in the past. As like Porrini & Starbuck (2015) find, information and knowledge have become highly valuable in developed economies. With information we refer to data that has meaning, which derives in organizational contexts from sense-making frameworks that reflect organizations' properties, including the different messages communicated internally and externally.

But as information changes rapidly, knowledge instead develops incrementally, because it is the accumulation of information. This task calls for clear focus and even a little creativity. Because, like Axson (2010) describes the best practice organizations tend to avoid relying on what exists today. Instead, these organizations seek out ways to provide a distinct competitive advantage in better anticipating customer needs and in quickly fixing operational problems. Making increasingly more advanced use of information.

Therefore, the value of information is increasingly being recognised and it is considered to be a key economic resource - one of the organizations most important assets.

An asset can be defined as something that has value. However, assets on their own are not of much use, but the source of value comes from the opportunities that possession of the assets creates. The same applies to data, it can deliver value only through effective transformation i.e. the progression of knowledge discussed earlier, into an action or decision. Such knowledge allows management to make decisions that will influence the drivers of the change and improve future performance. For this to be realized, the organization's processes and systems that generate data and produce information and knowledge need to be aligned with the processes and people who derive insight, make decisions, and put them into action. (Axson, 2010, pp. 156-157)

5 Empirical Study

This chapter is dedicated to the empirical research. We will first introduce the case company and use the PEST-analysis to go through briefly the general business context. Then proceed further with describing the decision-making power in the company, the finance function and the management reporting process. Concluding the chapter with a current state analysis conducted using the SWOT analysis framework.

5.1 Case company overview

Tecnotree Group (hereinafter referred to as Tecnotree) operates in the field of telecom IT solutions. Providing globally products and services for circa 90 telecom operators in around 70 countries. The company's products and solutions portfolio provides to telecom operators, known today as communication service providers, the full range of business management systems for the management of products, customers and revenue. The business is based on system project sales, maintenance contracts, managed services, and on customising, support and professional services. The corporation holds today a strong footing, especially, in the developing markets, such as Latin America, Middle East and Africa, employing globally around 1 000 people. (Tecnotree, n.d.-a)

Tecnotree comprises of Tecnotree Corporation, headquartered in Finland, and its subsidiaries. The main subsidiaries are Tecnotree Convergence Private Ltd, India, Tecnotree Convergence Middle East, UAE, Tecnotree Ltd, Ireland, Tecnotree Sistemas de Telecomunicação Ltda, Brazil, Tecnotree Argentina SRL, and Tecnotree (M) Sdn Bhd, Malaysia. The company is registered and domiciled in Espoo, Finland. The parent company Tecnotree Corporation is responsible for the group's administration, strategic planning, finance, financing and investor relations, and provides corporate services for the operational business units. The parent company buys services from its subsidiaries, such as sales, R&D, delivery, logistics and manufacturing activities, depending on the role of the subsidiary. (Tecnotree, n.d.-c)

Tecnotree's vision is a connected world, where personalized content, product and service bundles are offered in digital marketplaces. The aim is that the products and solutions produced enable the communications service providers to expand their business by creating digital marketplaces, bundle services for every taste and boost customer lifetime value. (Tecnotree, n.d.-b) This allows Tecnotree to build growth by enabling the service providers to create such marketplaces. The growth is based on strengthening the existing customer relationships as well as entering into new markets.

So that we can better understand decision making in the organization and the business context, it is good to go through briefly the general factors affecting the current environment of the company. This is typically done using a PEST or PESTEL analysis - a tool designed to understand the external macro environment in which an organization operates. That helps to better understand the market conditions, and as such recognize the position, potential and direction for the business. Each letter of this acronym represents a factor believed to affect the organization's environment, namely: political, economic, social, technological. Including additionally, in the broader PESTEL model also the environmental and legal aspects. (Gupta, 2013)

The political factors of the environment present actual and potential restrictions on the business operations. These restrictions can take the form of laws and regulations, tax policies, trade and tariff regulations, i.e. the ways governments can intervene on the telecommunications markets. The economic aspects relate to the changes in the wider economy such as economic growth, interest rates, exchange rates and inflation rate that can all have an impact on the telecommunications market. The prevailing global tight-

ened political situation brings tensions also to the business world. Besides, its own challenge creates as well the prolonged weak economic situation in Europe - cost savings must be made and productivity needs to be increased without the loss of quality. Despite the challenging situation, the company needs to be able to develop and create new and this stresses finding an innovative way of working increasingly important.

The social factors include in the analysis the diverse cultural and demographic aspects of the society, relating to e.g. patterns of behaviour, tastes and lifestyles. The socio-cultural dimension of the telecommunications market has been strongly affected by the change occurred in the customers' preferences and life habits, concerning the communication channels used daily. The switch from voice to data traffic, that has led to the Internet being the preferred communication channel, exploitable by the multitude of applications, which can be used on smartphones and other smart devices. This is driving the expansion of digital marketplaces, opening many new business opportunities but simultaneously competition is also intensifying. The technological factors relate to the application of new inventions and ideas such as R&D activity, automation, technology incentives and the rate of technological change. The speed of technological change is especially important in trade sectors such as telecommunications, as it is practically transforming the whole industry and the ability to remain competitive depends strongly on the company's capability to implement new technology

5.2 Decision-making power in the company

Tecnotree's Annual General Meeting of Shareholders holds the highest authority and decision-making power in the company. The board of directors, elected in the Annual General Meeting, is the body who jointly oversees the activities of the company and is responsible for the suitable organisation of business operations and corporate administration. The board shall also ensure that in the company the accounting and financial administration are controlled appropriately. In addition, the board is accountable for promoting the interests of the company and all its shareholders by pursuing to carry out a business strategy that in the long-term ensures the best possible return on capital invested in the company. (Tecnotree, 2014)

The CEO of the company is appointed by the board, whose duty is to lead the operational activities and be in charge of the performance of the corporation. The CEO shall also ensure that the company's accounting is made in accordance with the legislation and

that its assets are managed reliably. The board appoints as well the members of the company's management board. The members of the board are experienced professionals in different fields. Each member of the management board is the director of a function in the company as depicted in the top management organization chart (Figure 15). (Tecnotree, 2014)

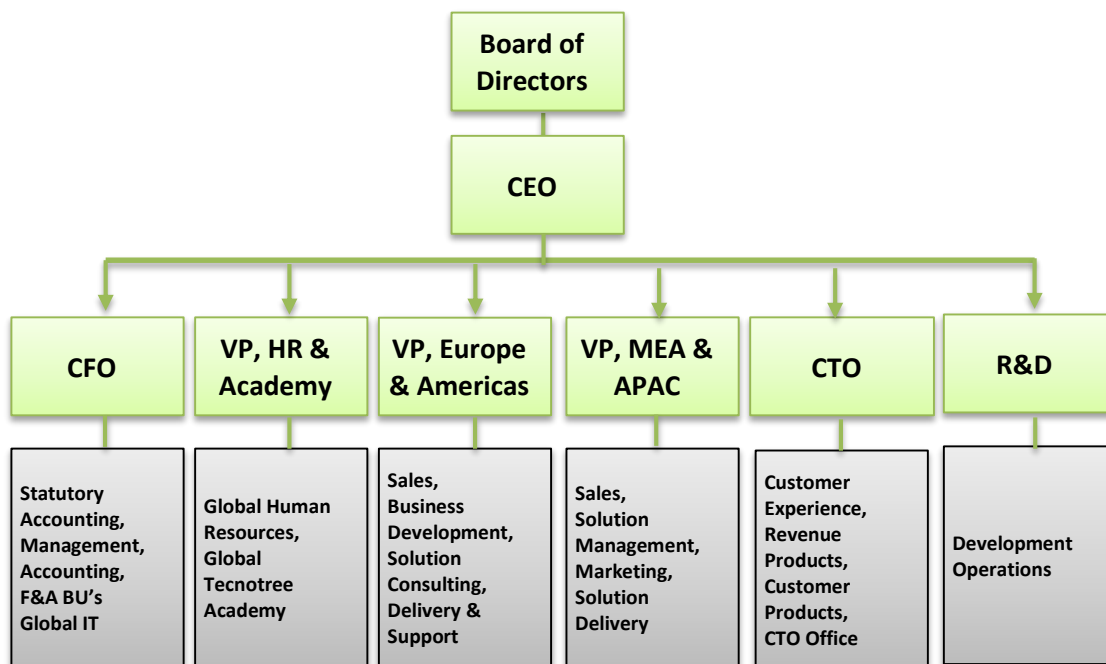


Figure 15. Organization chart - Top management

The management board described in the organization chart (Figure 15) is chaired by the CEO. The duty of the management board is to support the CEO, manage and develop the company's operations in accordance with the agreed strategies and objectives, create group-level procedures, provide support to risk management processes, monitor the global human resource policy and remuneration system, as well as, manage stakeholder relations. (Tecnotree, 2014)

5.3 Finance function and management reporting

The finance function provides a broad range of different services to meet corporate, legal, statutory, tax and compliance requirements. This includes transactional, administrative, professional and technical services to support the business. As well as, delivering financial and management reporting to support the core business activities and bring

value for decision-making. The general reporting objective is to produce timely and relevant information for decision-making.

The local finance teams of the operational subsidiaries support the day-to-day management of the regional business operations and are responsible for the local bookkeeping and other statutory obligations. The local finance teams need to also report to the head office and ensure the accuracy of the figures reported. The head office finance department, led by the group's CFO, is responsible for producing the required group financial statements for external reporting and internal accounting analysis and performance reports to the management of different business units to monitor the profitability of the business. All finance team employees have their own role in reporting and internal control, but the group's CFO and the head office controllers hold the main responsibility for those issues related to group management accounting, internal reporting and control. It is also the role of the head office finance department to support, monitor, instruct and as applicable offer training to the local finance teams.

The board of directors and the Group's management need several financial and operational reports regularly; monthly, quarterly or annually. As the consolidated monthly reporting is done on the group level, the data must be collected from each subsidiary. The head office controllers gather, analyse and edit the data of the parent company, and require the equivalent data from the subsidiaries. Detailed description of the financial reporting system architecture used is shown in Figure 16. In practice, it helps that the company uses mainly a common ERP system, so the data for the different companies can be also viewed at the head office. In addition, also some other source systems are commonly used, which helps in the information consolidation. Hence, most of the data of the different companies can be retrieved directly from these source systems at the head office, when the necessary monthly reporting closure procedures have been completed. Standardized methods are used at all stages of the data collection process and fully manual collection is minimized. Once all data is loaded into the consolidation system, analysed, and group consolidation is done, reports are prepared, checked and analysed and delivered to the relevant parties.

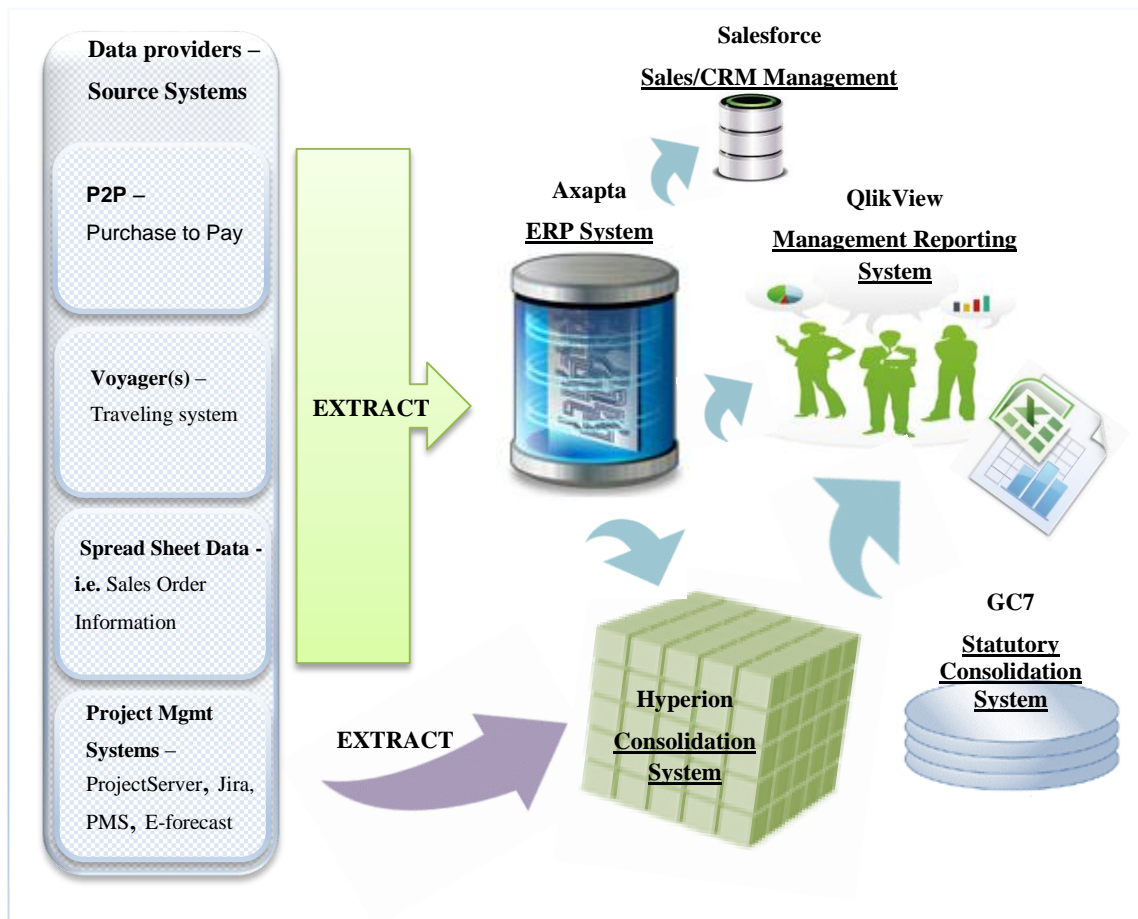


Figure 16. Financial reporting system architecture

The consolidated monthly actuals form the basis for further analysis, such as comparison to budgets, targets and plans. Support information provides context and understanding, which allows financial information to be linked to the underlying organizational activities. This type of information is typically required to interpret and assess the significance of the financial information, i.e. trends, interpretations or analysis.

Period reports are made on a regular basis at approximately the same format, which are usually monitoring reports used for directing and supervising the activities. These reports must be ideally drawn up quickly after the end of the reporting period and deviations, as well as, other relevant information should be clearly visible. In addition, there are context-sensitive ad-hoc reports, which are issued as needed, which often provide alternative calculations, setting out clarifications for decision-making. The reported financial information can consist of numbers and descriptions, including records, accumulations and analysis concerning the financial consequences of the organizational activities relating to the past or future.

5.4 Current state analysis

The SWOT analysis is one of the basic analytical tools used to make a situation analysis to determine where the company stands on the key strategic areas. This helps to better understand the big picture of the most important factors that influence the survival and success as well as build an action plan. More explicitly, the SWOT acronym refers to the company's internal potential and limitations, i.e. the strengths and weaknesses, and the probable opportunities and threats in the external environment. This type of an analysis helps to recognise the strengths, which make it easier to take advantage of the opportunities and react against the threats. Similarly, the weaknesses identified should be taken into account to find out how to meet the opportunities and defend from the threats. In other words, making such an analysis of the organization's environment helps to focus activities into areas where the company is strong and where the greatest opportunities lie. (Ifediora, et al., 2014) Current state analysis, carried out using the SWOT framework, of the management reporting environment in the case company is shown in Figure 17.

| | HELPFUL | HARMFUL |
|----------|---|--|
| INTERNAL | <p>Strengths</p> <ul style="list-style-type: none"> - Vision, readiness for reform - Openness to new ideas - Experience coupled with new knowledge - International standing | <p>Weaknesses</p> <ul style="list-style-type: none"> - Level of financial resources - Old tools / systems/ techniques/ approaches - Process inefficiencies - Gaps in internal communication - Staff motivation |
| EXTERNAL | <p>Opportunities</p> <ul style="list-style-type: none"> - New technologies - Access to international experience / co-operation - Streamline processes - Cost savings - Define own destiny – view information as strategic asset | <p>Threats</p> <ul style="list-style-type: none"> - Funding unpredictability - Fast paced quantum increase in available information - Competition for talent - Fear / opposition to change among staff |

Figure 17. SWOT analysis: Management reporting

Tecnotree's clear strength is definitely a strong vision that is aspirational and inspirational. As well, the readiness for reform and ability, if necessary, to implement changes helps minimize risks, sustain performance and respond to change in ways that create advantage. Management encourages employees to put ideas forward, which supports creative thinking and development of an innovative working culture. Flow of information and ideas up, down and across the business encourages the development of new ways doing things and can also encourage business productivity.

The finance teams' strength lies in diversity. Team members' extensive experience of many years on the job coupled with the fresh knowledge / skills of the younger employees enables building effective and multi-dimensional finance teams. Combining each other's strengths and drive provides as well a great environment for growth that can help reach optimum results and strengthen the organization. The international position of the company can be seen also as a strength, since the global organization enables diverse international cooperation and knowledge sharing.

Organizations increasingly require more speed to adjust to the changes in the environment. The role of technology in meeting this challenge can be seen as increasingly important. Therefore, some outdated tools and systems used in Tecnotree's management reporting can be seen as a weakness. Because, these can slow down and complicate the work and also cause extra costs. There is also a risk that these can prevent the organization from developing and reduce the competitiveness. This is because, when technology is utilized for routine work tasks, more time is available for analysis and development. Some inefficiencies in techniques and processes can be also identified, which may result in benefits lower than expected. Particularly, as considering the new perspectives and possibilities is vital to adapt to the today's constantly evolving business environment.

There is also room for improvement in systematic internal communication, so that desired information reaches employees at every level. Because, internal communication handled in a systematic way is a powerful tool that can have tremendous potential for positive outcomes – like building commitment, trust, job satisfaction, motivation and improved performance. That can, among other things, enhance company reputation, organizational success and improve results. The uncertainty about funding needs to be also seen as a weakness, because it creates a lot of tension and it also sets investment

constrains that may slow down company development. In addition, the challenging situation of the company may also affect the employees' motivation.

Investing in new technology provides many opportunities for Tecnotree to enhance its management reporting process to more effectively support and add value for management decision-making. Utilizing modern technological solutions in the collection, handling, and presentation of information, gives more time for analyses and creates opportunities to add value. Modern technologies facilitate also access to information in real-time, help optimize and rationalise the distribution of information, and offer interactive user-friendly reporting solutions, which can contribute to increasing the usability of information in decision-making. New solutions as well support the development of processes that may globally help uniform information and reporting consistency. Thus, aid also in streamlining the international processes and reporting, which can increase efficiency and create opportunities for cost savings. Fundamentally, the company holds all the cards to define its own destiny, i.e. by making the right choices to be in a strong position taking the advantage of information as a strategic asset.

However, nowadays the business world have to contend with a wide variety of challenges. While the fast pace of technological development and quantum increase in the amount of available information create many opportunities, these can be also viewed as a threat bringing new challenges to efficiently process and analyze data etc. Especially, considering Tecnotree's current financially challenging situation, which may affect the company's capability to invest, it can pose a challenge to keep up with the pace.

As a result of the changing business conditions, the role of the finance function in organizations has widened and deepened to meet the decision makers evolving information needs, which has led to intensifying competition for analytically minded experts. This can be seen as a threat, because, as the talent playing field gets more and more competitive, it will become ever more challenging to attract and retain people with great potential, which are much needed in order to win going forward. Therefore, it is vital the company is able to offer a competitive workplace. Employees fear / resistance of change can also create challenges and tensions in the work, in which case there is a risk that the peak performance may be incomplete.

6 Empirical Findings and Analysis

In this chapter, we will describe how the empirical data has been collected using the online questionnaire. Then we will discuss and analyse the obtained results under the following areas: background information, the use of financial information, quality of management accounting reports, development areas of management accounting reports and suggestions for improvement in management accounting reports.

6.1 Online questionnaire

The research questionnaire was carried out online. This distribution method was selected due to its versatility, convenience, efficiency and affordability to implement a questionnaire in which selected respondents are scattered across the globe. The online questionnaire responses are also stored automatically in a database, which enables hassle-free management of data and as a result a smaller possibility of data errors.

The aim of the online questionnaire was to find out, how the reported management accounting information can better support efficient decision-making within the organization. The questionnaire (see appendix 2) was constructed based on the literature review and observations made as to allow groups of questions to provide results pertaining to the research questions to meet the study objectives. The questions follow a logical progression with simple themes to group the questions to sustain the interest of the respondents and stimulate question answering. These themes were as follows: background information, the use of financial information, quality of management accounting reports, development areas of management accounting reports and suggestions for improvement in management accounting reports.

The online questionnaire was carried out using a software, called E-lomake, offered by Metropolia University of Applied Sciences that allows to create and publish user-friendly, easy to fill online forms, which can be easily targeted to the desired respondents group. The responses are, as well, stored automatically in a database and by using the software the information can be browsed online. Also the saved data can be simply transferred to a spreadsheet and / or statistical software for further analysis. In this study, the questionnaire results have been organized and analysed in the Microsoft Excel spreadsheet. Numerical values have been assigned to the non-open-ended questions for the data analysis. Qualitative analysis for the open-questions was also conducted following thematic

analysis principles. That is an analysis method commonly used to identify, categorize analyse, and report patterns of meaning (themes) in a qualitative data set to provide answers to the research questions addressed. The aim of this analysis is to organise and describe the data set in rich detail. Thematic analysis is not tied to any particular outcome form - the result can simple be a list of themes, a complex model building thematic networks, or something in between. Given this flexibility of thematic analysis, it can used within different frameworks to gain insight and knowledge from the data gathered. (Braun & Clarke, 2006)

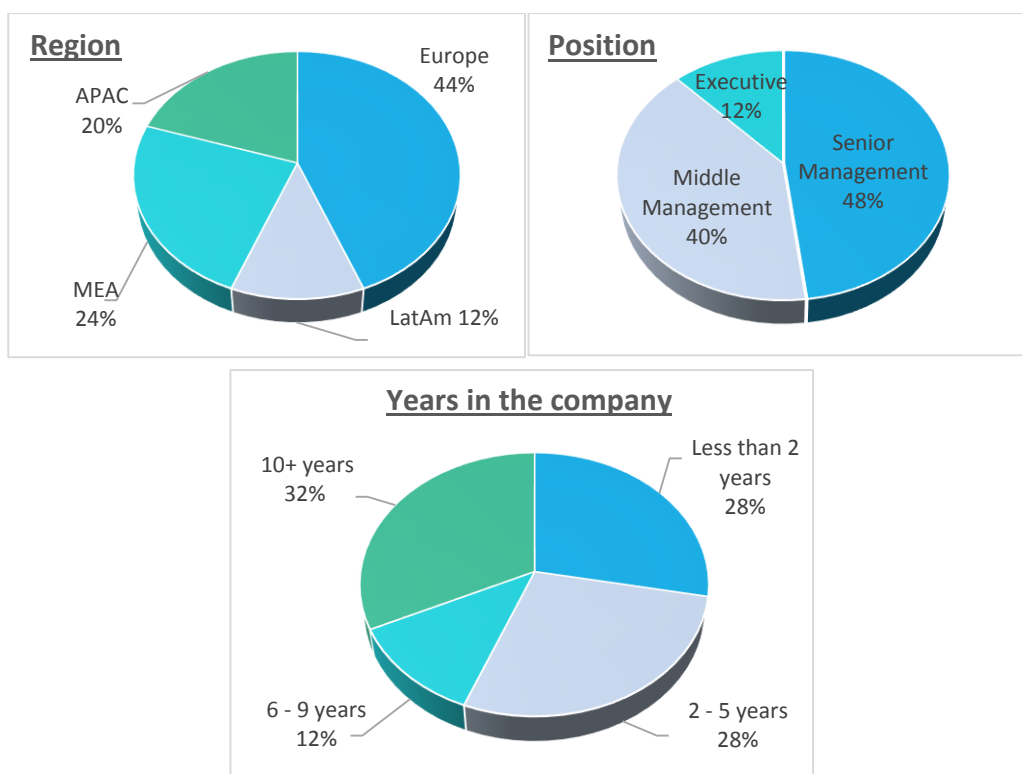
The respondents were selected using purposive sampling, which is a non-probability sampling technique used in which the researcher selects the respondents based upon variety of criteria that are essential to the research dependent on the research questions and objectives. This basically means that the sample selection is based on the researcher's judgement. (Saunders, et al., 2009, pp. 237-239) Considering the objectives of this study, as the target group of the questionnaire was selected the case company's management, which was believed to use financial information in decision-making at work. The target group included, senior management, middle management, as well as experts – a total of 48 people.

The online questionnaire was completed between 12th of November, 2015 and 27th of November, 2015. An email (see appendix 1) was sent out to each respondent including a link to complete the questionnaire, which explained the purpose of the research and its relevance. The online questionnaire included a welcome screen that intended to capture the people's interest and encourage them to proceed. A reminder email was sent to all respondents to participate in the questionnaire. The participation to the questionnaire was anonymous. Contact information of the researcher was provided in the emails and in the online questionnaire, so that it was easy for the respondents to contact in case there were any questions. A total of 25 people from the target group responded to the questionnaire, which gave a response rate of 52 %. The more detailed results of the questionnaire are presented in the following sections of this chapter under the earlier introduced theme groups.

6.2 Background variables

In background variables, the first section of the questionnaire, the respondents were asked to answer questions about their region, current position in the organization, how

long they had been working in the organization and their requirement for reports containing financial information at work. As the section name indicates, the intention of these questions was to profile the background of the respondents. In relation to these variables, we will also analyse some questionnaire results, as it is possible, so that the respondents cannot be identified. The following figure (Results 1) presents a summary of the answers to these questions.



Results 1. Background variables – Region, position and years in the company

Most of the respondents, 44 percent, were from Europe region. The second highest number of responses, 24 percent, came from MEA (Middle East and Africa) region. From the APAC (Asia-Pacific) region 20 percent of the responses were received and only 12 percent of the answers came from LatAm (Latin America) region. However, it is important to note that this is not directly proportional, since equal number of questionnaires were not sent to each region. Because the target group was not evenly distributed among the regions.

The senior management was the most active respondent group. Their share of the total respondents was 48 percent. The second most active respondent group was middle management, which accounted for 40 percent. The executives accounted for 12 percent

of the questionnaire responses. The division among these groups was not either equal in the target respondent group, so these figures cannot be directly compared with each other. However, this clearly shows that the selected respondents are placed in the organization in line with the study objectives and are eligible to answer the questions.

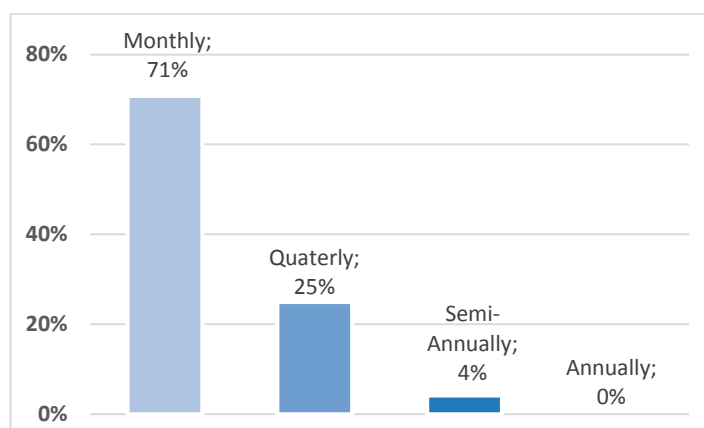
In general, most of the respondents were experienced and had long working careers. The majority of the respondents, 32 percent, had worked for the company for over 10 years. Out of the respondents, 28 percent, had worked in the company for 2 to 5 years. As well as, the share of respondents (28 percent) who had worked in the company for less than 2 years. The proportion of respondents who had worked in the company for 6 to 9 years was 12 percent.

All respondents stated that they need reports containing financial information in their work. In case a respondent would have experienced that they do not need these reports at work, this answer would have automatically directed the questionnaire straight to the final section concerning the suggestions for improvement in management accounting reports. At this point, there was also an open question, in which the respondents had an opportunity to explain why these reports were not seen necessary at work. Because none of the respondents felt this way, there is no further analysis in this regard. Nonetheless, this result reassures the validity of the respondent group to answer the set questions.

6.3 The use of financial information

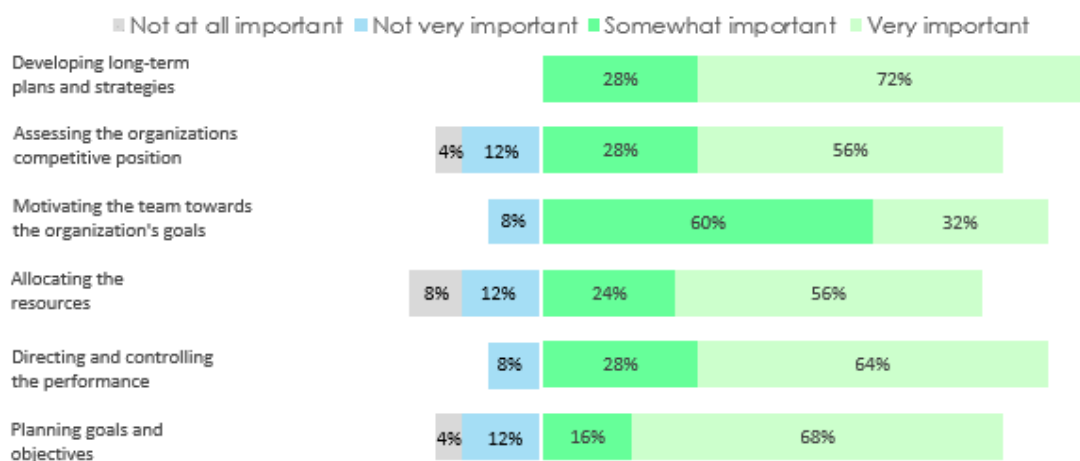
In the next questionnaire section, respondents were asked questions to survey how often in general they used reports containing financial information at work, how important they perceived it to have these reports available to support in different activities, how the available financial information was considered to be used in their organization and whether the information was viewed as a strategic asset.

As the below figure (Results 2) shows, most of the respondents (71 percent) used reports containing financial information at work on a monthly basis. One fourth (25 percent) of the respondents used this type of reports quarterly. Some respondents (4 percent) also used such information only semi-annually.



Results 2. The time interval in using reports containing financial information at work

To measure the perceived significance of the availability of reports containing financial information to support in different activities, respondents (Results 3) were asked to rank the importance of having such reports for each activity on a scale that includes very important, somewhat important, not very important, and not at all important.



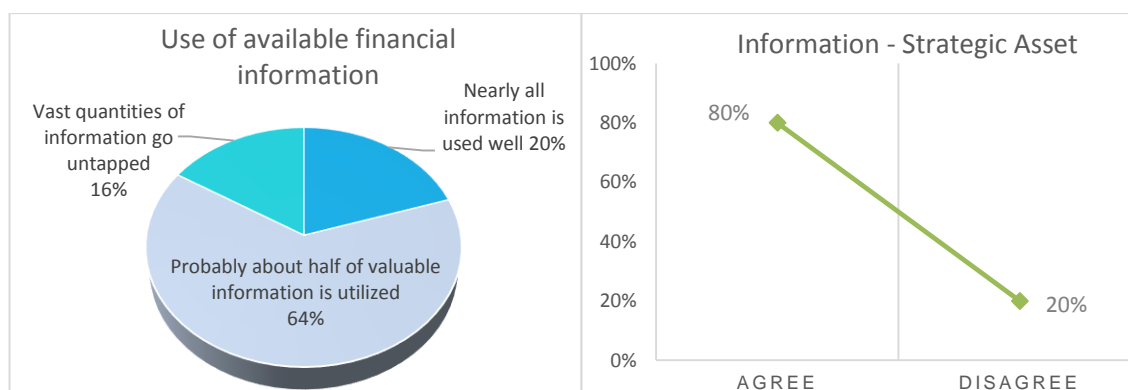
Results 3. Importance of financial information availability

As the most important, respondents perceived to have reports containing financial information available to support in developing long-term plans and strategies. The respondents were in agreement that it was either very important (72 percent) or somewhat important (28 percent). In the other activities, there was more dispersion in the responses. The most widely respondents answered to the three activities concerning planning goals and objectives, allocating the resources and assessing the organizations competitive position. Meaning that in respect to these the differences were the greatest in the perceived importance of having reports containing financial information available to support

in these matters. Out of the respondents 80-84 percent ranked having these reports available to support at least somewhat important. On the other hand, 16-20 percent of the respondents slightly contradictorily perceived that it is not very important or not at all important to have these reports available to support in these matters. Respondents had somewhat different views of the importance to have these reports available to support in directing and controlling the performance and motivating the teams towards the organization's goals. In both, 8 percent of the respondents were of the opinion that it is not very important. The rest of the respondents described that it is either very important or somewhat important. The more detailed importance rank results of each activity have been depicted in the previous figure (Results 3) above.

Then the respondents (Results 4) were asked to select the option best describing how the available financial information was used in their organization. The clear majority of the respondents (64 percent) thought that about half of the valuable information was probably utilized. One fifth (20 percent) of the respondents felt that nearly all of the information that is of real value was well used. In turn, 16 percent saw also that vast quantities of information was unexploited.

Information (Results 4) was viewed as a strategic asset by 80 percent of the respondents. The rest of the respondents (20 percent), did not experience that information would be considered as a strategic resource in their organization. Reasons mentioned for this were lack of information sharing, lack of prioritization, inability to receive the right information. Also was expressed that the information is needed more often and in a more detailed level, so that it could be a strategic asset of the organization.



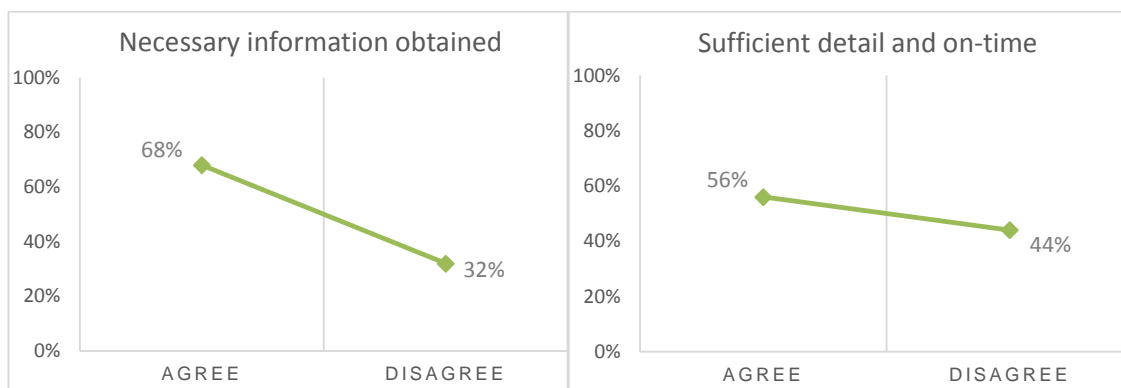
Results 4. Use of available financial information and role as a strategic resource

6.4 Quality of management accounting reports

In the following questionnaire section, the respondents were asked to describe the quality of management accounting reports. Questions were asked in this theme to survey if respondents received the necessary management accounting reports on performance relative to established objectives and whether the information provided was in sufficient detail and on-time to enable carrying out decision-making efficiently. In addition to this, respondents were asked to indicate their opinion about statements measuring the quality of the current management accounting reports considering the decision-making perspective.

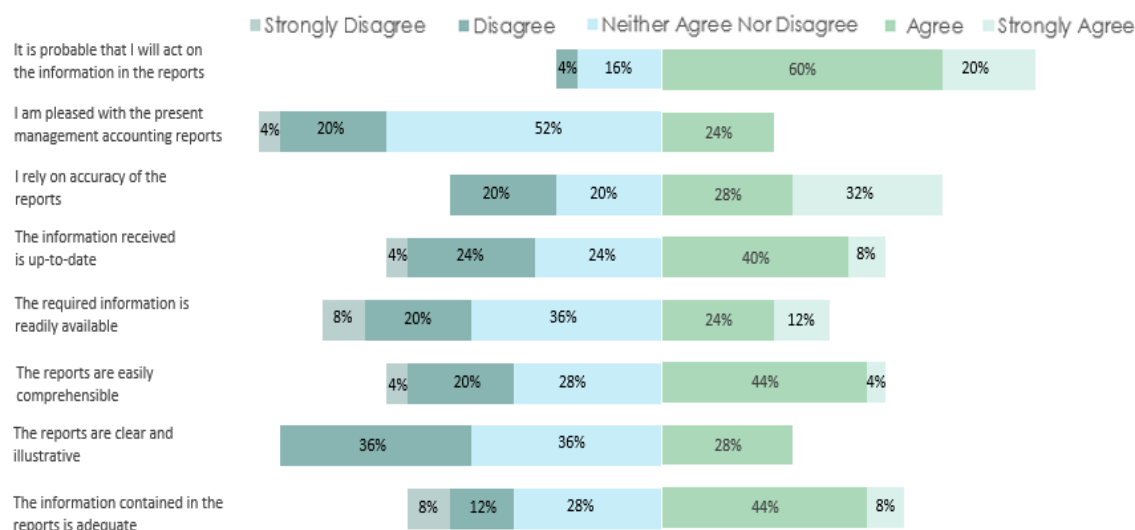
As can be seen from the figure below (Results 5), the necessary management accounting reports on performance required to reach the objectives received 68 percent of the respondents. In contrast, 32 percent of respondents felt that the information obtained was incomplete. In the open comments, respondents pointed out that the reports were not received on a regular basis, only the monthly expense reports were received or it was difficult to obtain the operational costs for the sales team. One of the respondents expressed that it is important to receive reports regularly to compare actuals to budget. Another respondent stressed that it is important to get information to enable advance planning and to avoid last-minute decision-making.

In the opinion of 56 percent of the respondents (Results 5), the information was provided in sufficient detail and on-time to enable efficient decision-making. On the contrary, 44 percent were of the opinion that there are gaps and challenges. In the open comments, the respondents mentioned that challenges brought to have only the consolidated top level of the information (which has not been allocated by cost center nor by project), the time it sometimes takes to get the required information, the availability of information more frequently or on request. Also was mentioned that at times it is not clear what the numbers mean or that the information is subject to change so that re-validation is needed. As well, room for improvement was seen in the quantity of redundant information. A few of the respondents also suggested online “links” to be made available for self-service all the time. In addition, one of the respondents pointed out the added value of more detailed information available via Qlikview.



Results 5. Necessary information obtained with sufficient detail and on-time

To measure the quality of the management accounting reports considering the decision-making perspective, respondents (Results 6) were asked to rank their agreement with statements on a scale that includes strongly disagree, disagree, neither agree nor disagree, agree and strongly agree.



Results 6. Quality of management accounting reports

The figure (Results 6) above illustrates the respondents' opinions on the quality of the management accounting reports considering the decision-making perspective. The respondents almost completely agreed (80 percent) that it is probable they will act on the basis of information obtained from these reports. Otherwise, there was more dispersion in the responses. Meaning the agreement with the statements shown was more clearly divided. Out of the respondents 50-60 percent, agreed or strongly agreed with relying on the accuracy of the reports as well as the adequacy of the information contained in the reports. Instead less than half of the respondents agreed or strongly agreed with the

other statements. Out of the respondents 36-48 percent, agreed or strongly agreed that the information received was up-to-date, required information was readily available, and the reports were easily comprehensible. Respondents agreed the least on that the reports were clear and illustrated, as well as the general satisfaction with the current management accounting reports. Under 29 percent of the respondents agreed or strongly agreed with these statements.

Interesting was in the responses that 52 percent of the respondents did not take a position, i.e. neither agreed nor disagreed, whether was pleased with the current management accounting reports. Likewise, 36 percent of the respondents did not express any position regarding whether the required information was readily available or if the reports are clear and illustrated. Out of the respondents 36 percent, were of the opinion that the reports are not clear and illustrative. With the reported information received to be up-to-date and ready availability of required information, disagreed or strongly disagreed 28 percent of the respondents. Not satisfied, in disagreement or strong disagreement, were 24 percent of the respondents with the reports easy comprehensibility and satisfaction of current management accounting reports. One fifth of the respondents, 20 percent, disagreed or strongly disagreed with the accuracy of the reports and the adequacy of the information contained in the reports. Only 4 percent of the respondents did not see it likely they will act based on the information obtained in the reports. The more detailed agreement rank results with each statement have been depicted in the previous figure (Results 6) above.

6.5 Development areas of management accounting reports

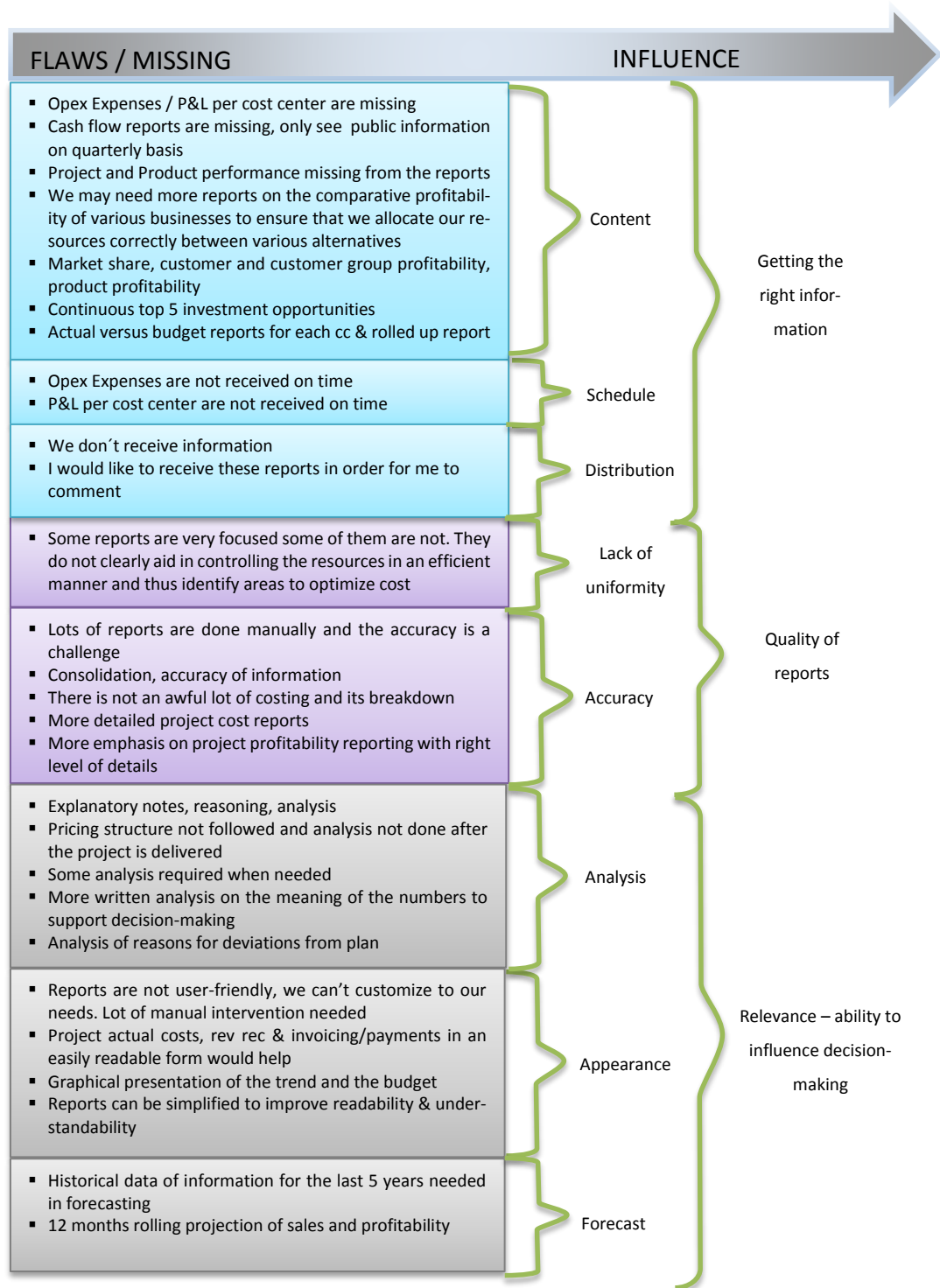
After this, in the next questionnaire section, respondents were asked to think about the information required for decision-making and the available management accounting reports and to describe if something was missing in these reports. In addition, respondents were asked to select the typically perceived challenges (up to three) in their organization to extract value from the current management accounting reports to support decisions.

The aspects perceived to be missing in the management accounting reports from the decision-making perspective were inquired with an open question. Overall, 19 respondents (76 percent) expressed their opinions (Figure 7). Similar answers were classified in the same category and these classes were given descriptive names based on the content. These eight basic theme categories derived from the textual data were: content,

schedule, distribution, lack of uniformity, accuracy, analysis, appearance and forecast. The analysis was continued and these basic themes were further refined and placed into three upper level theme clusters of signification. That summarize the principal assumptions of a group of basic themes, in order to more clearly describe what the text says. These upper level theme clusters were getting the right information, quality of reports and relevance - ability to influence decision-making. Influence encompasses these all and describes as a whole what the meaning of the text is within the context of the analysis performed.

Some respondents felt that the reports lack information such as product performance, customer and customer group profitability, or actual versus budget for each cost center and rolled up summary. Others saw that reports are needed to monitor cash flows and the comparative profitability of various businesses to ensure correct resource allocation between various alternatives. In addition, getting the information on time or not receiving the reports was as well mentioned as a challenge. The responses also indicated that consistency and accuracy was needed. Furthermore, the responses revealed that more in-depth analysis was desired. As well, the responses showed that the appearance of the reports should be user-friendly, easy-to-read, customizable, and include some graphical presentation of the trend. Few responses also brought up the importance of forecasting.

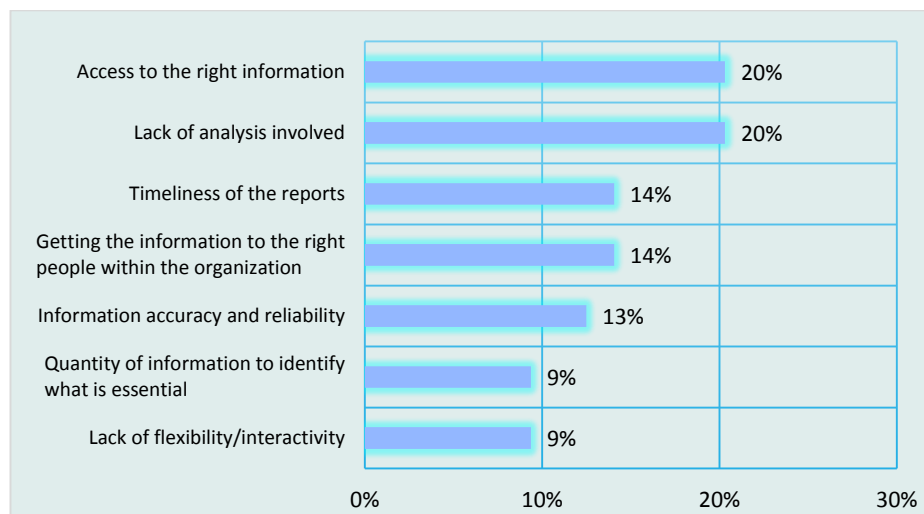
Considering the decision-making perspective the named issues relating to the content, schedule and distribution affect the ability to get the right information. While lack of uniformity and accuracy impact the quality of the reports, which may undermine their credibility. Analysis, appearance and forecast again affect the relevance of the reports, i.e. ability to influence decision-making. The lack of these can reduce the usability of the reports, so that the desired benefits cannot be attained. The combined effect of these reflects the overall usability of the reports in the managerial decision-making process.



Results 7. Missing factors in the management accounting reports and their impacts

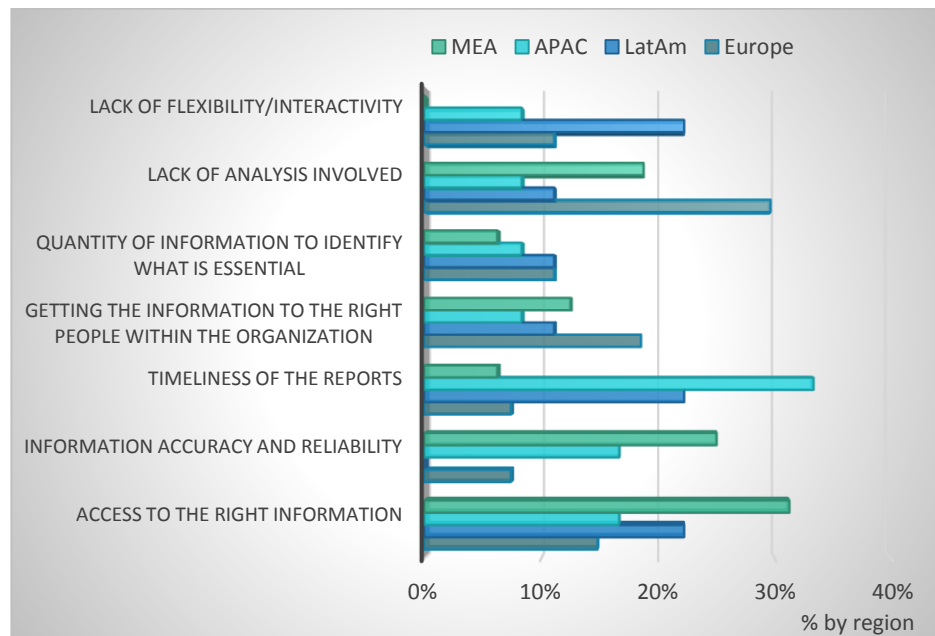
The respondents (Results 8) typically perceived, as the main challenges to extract value from the current management accounting reports to inform decisions, the access to the right information (20 percent) and the lack of analysis involved (20 percent). After this, the most significant challenges were seen to be the timeliness of the reports (14 percent), as well as getting the information to the right people within the organization (14 percent).

Some respondents felt as the challenge the information accuracy and reliability (13 per cent). The least were considered as challenges the quantity of information to identify what is essential (9 percent) and the lack of flexibility and interactivity (9 percent).



Results 8. Typically perceived challenges to extract value from management accounting reports to inform decisions

At the regional level (Results 9), the differences in the challenges perceived stand out more clearly. In the MEA (Middle East and Africa) region, the main challenge was seen the access to the right information. In addition to this, major challenges were considered the information accuracy and reliability and the lack of analysis involved. While in the APAC (Asia-Pacific) region, the most significant challenge was seen the timeliness of the reports. In addition, as the main challenges were considered the accuracy and reliability of information and the access to the right information. As equal challenges were seen in the LatAm (Latin America) region access to the right information, timeliness of the reports and the lack of flexibility and interactivity. As the most significant challenge was seen in the Europe region, the lack of analysis involved. In addition, as the other major challenges were perceived getting the information to the right people within the organization and access to the right information



Results 9. Regional division of challenges

The respondent also had an opportunity to name other challenges and comment by using an open comment space. A couple comments were made. One respondent highlighted the lack of interactivity and stated it is not easy or possible other than by aggregating manually previous reports to combine, filter, view or analyse information over a time frame other than the one given by the report (e.g. monthly). As a challenge was also seen that reports are distributed and can't be fetched on a needs basis (includes timing, content etc.). Another respondent brought up that the analysis part is missing.

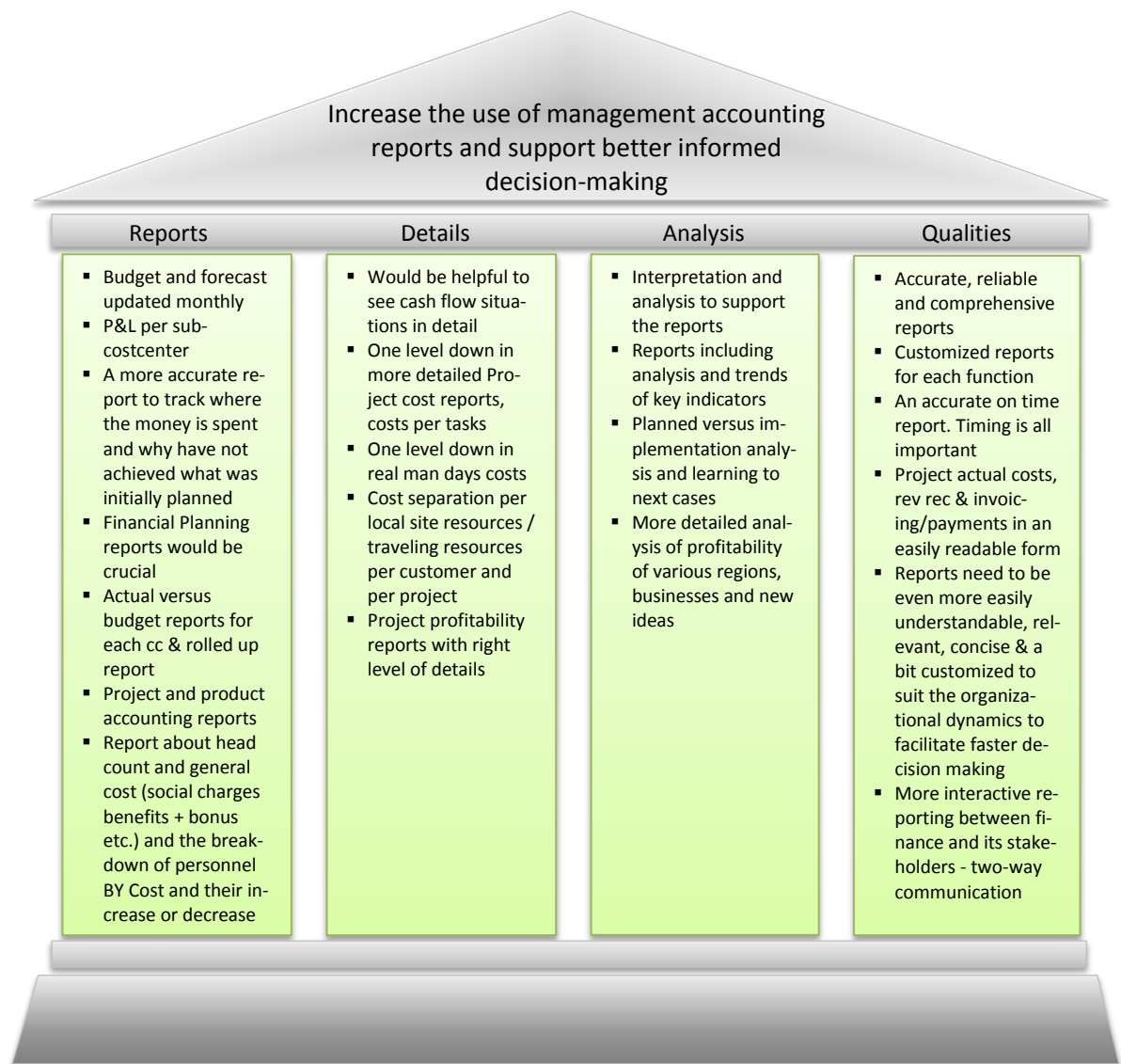
6.6 Suggestions for improvement in management accounting reports

To conclude the questionnaire, respondents were asked to give suggestions for improvement in management accounting reports that could increase the utilization and support better informed decision-making. In addition, respondents were also asked to select what opportunities (up to three) they see the increased availability of information could bring in their organization.

The suggestions for improvement in management accounting reports were inquired with an open question. Overall, 17 respondents (68 percent) expressed their opinions (Results 10). The textual data was carefully analysed to identify patterns and develop

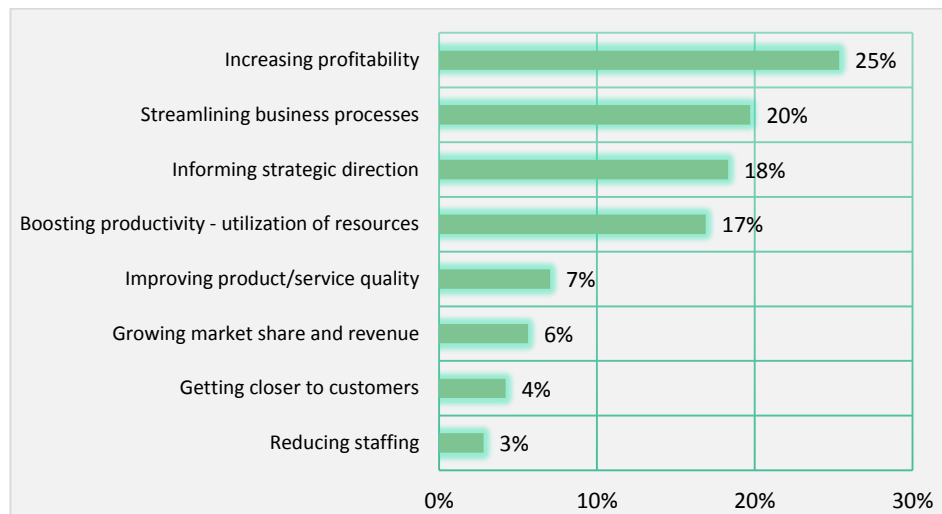
themes. Based on similarity the identified themes were as follows: reports, details, analysis, and qualities. As a whole the ability to increase the use of management accounting reports and support better informed decision-making, encompasses all the above mentioned themes within the context of the analysis performed.

Some respondents pointed out different reports, which could increase the use and better support decision-making. These included a more detailed report on monitoring the expenditure, budget and forecast reports updated on a monthly basis, actual versus budget reports, project and product reports as well as headcount and personnel costs report. Others wanted to see more details, such as the cash flow situations, project cost and profitability reports, real man-day costs, traveling resources per customer/project, or cost separation per local site resources. In addition, respondents brought up the need for analysis, i.e. the reports should include supportive analysis and interpretation, trends of key indicators, planned versus implementation analysis and learning to next cases and more detailed analysis of profitability of various regions, businesses and new ideas. Qualities desired in the reports were also named, like on time, accurate, reliable and comprehensive reports; easily understandable, relevant, concise and customized to suit the organizational dynamics to facilitate faster decision making; more interactive reporting between finance and its stakeholders, i.e. two-way communication.



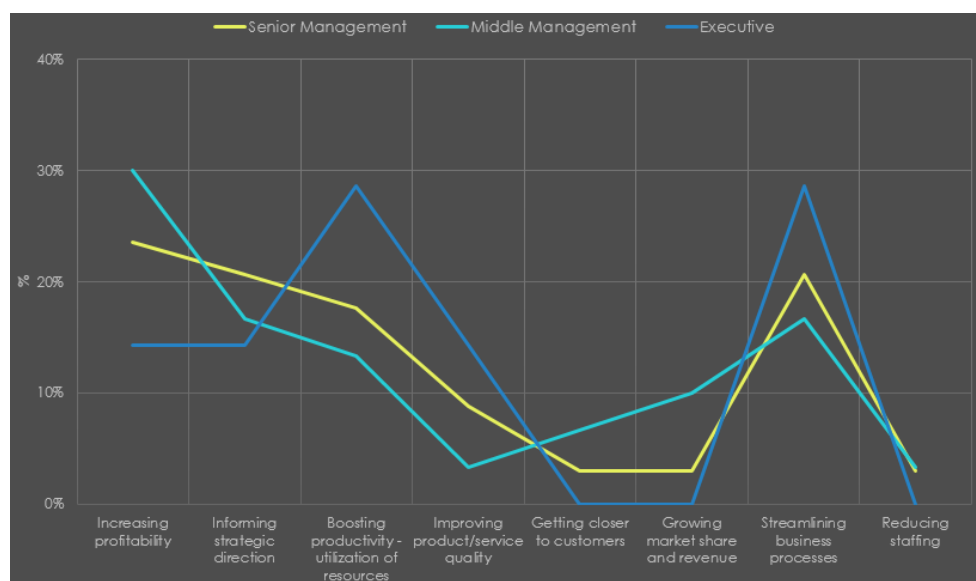
Results 10. Suggestions for improvement to increase the use of management accounting reports and support better informed decision-making

The respondents considered (Results 11) increasing profitability as the strongest opportunity (25 percent) of increased information availability. Opportunities were seen also to streamline business processes (20 percent), inform strategic direction (18 percent), and boost productivity by better utilization of resources (17 percent). Possible benefits were perceived to be grasped as well to improve product/service quality (7 percent) as well as to grow market share and revenue (6 percent). As the result of increased availability of information, little to no benefit were seen to get closer to customers (4 percent) or reduce staffing (3 percent).



Results 11. Opportunities seen as the result of increased availability of information

There were some differences in the opportunities seen by position (Results 12). Senior and middle management found increasing profitability the greatest opportunity, as the result of increased availability of information. By contrast, the experts perceived as the most important opportunities, better utilization of resources to boost productivity and streamlining business processes. Senior and middle management saw as the second most significant opportunities, informing strategic direction and streamlining business processes. However, need to note that there was a bit more dispersion in the middle management responses and the percentage shares of these were a few units lower. Otherwise, the experts experienced some opportunities in increasing profitability, informing strategic direction, and improving product/service quality.



Results 12. Opportunities seen by position

The respondent also had an opportunity to name other opportunities and comment by using an open comment space. A few comments were gathered. One respondent felt that it is important to be able to generate accounting reports per account in order to measure the overall performance of each account for better decision making. The overall company reports were seen helpful for shareholders and strategic decisions but not necessarily to give the required direction to mid-level management for making decisions regarding their own territory. Another respondent mentioned the cost savings and attaining the organizational objectives. One respondent stated knowing the places to put more money and where to cut and stop the activities.

7 Discussion and conclusions

In this final chapter, we will conclude the findings and discuss the most relevant ones in a general level. This discussion will be undertaken in the light of the research questions, which were presented in the Introduction chapter of this study. Secondly, based on the study findings we will present some recommendations for the organization. Furthermore, some suggestions for further research will be given.

7.1 Discussion of results

Given the accelerating pace of business changes and the significant amounts of information available to businesses using modern technology, obtaining useful, quality information is essential to take on business decisions. The purpose of this study was to explore how the current management accounting reports correspond to the management information needs and to identify how management reporting could be improved or supplemented, so that the reports would benefit the organization's management and better support informed and efficient decision-making within the study organization. More explicitly, the study sought to provide answers to the reports usability, quality, perceived challenges to extract value to support decisions, and development directions. The aim was to respond to one main research question, as well as three sub-questions. The answers to these questions based on the study results are presented below, starting with the sub-questions which aim to support more detailed exploration of the main question.

To what extent does the management make use of the current management accounting reports - how useful are these perceived?

The usability of the current management accounting reports was studied from many different angles. The study results showed that the majority of the organization's management used the reports containing financial information at work on a monthly basis, thus the overall utilization rate can be considered good.

Having reports containing financial information available to support decision-making was seen as important to the organization's management in many areas. Above all significant was perceived to have these reports available to support in developing long-term plans and strategies. As well, clearly necessary was considered to have these reports available to support in planning goals and objectives, as well as, directing and controlling the performance. Regarding utilization of the financial information, the study results indicate in most of the cases currently about half of the available information is utilized. Which is a strong indicator of the need, to pay more attention in the future to utilize available financial information more comprehensively in the organization.

The results of the study show that the reported financial information affects decision-making and management is likely to act on the basis of the information received. However, some essential things are evident from the results that can facilitate and enhance the usability of information to support decision-making. First of all, a prerequisite for the usability is to pay attention to the fact that the necessary information reaches the right recipient. Secondly, need to ensure the information is reported in sufficient detail and on time.

Somewhat unfortunate for the study results was the fact that many did not tell how pleased they were with the current reports, which leaves open the general satisfaction. Consequently in the future, it is particularly important in the management accounting reports, to emphasize highlighting essential information, clarity, accuracy and consistency in order to support the decision-making in the best possible way.

What challenges are seen to hinder the utilization of reported management accounting information in decision-making?

The results of the study show that it is important to pay attention to the accessibility to facilitate the effective use of information in decision-making. In other words, it is the question of awareness that who needs the reports and what reports are required. Therefore, it is necessary to ensure smooth, timely flow of information to make it possible to develop processes. However, it is worth to note that if there is too much information, there is a risk that the relevant information remains in the shadows and as a result unexploited in decision-making.

Reliability and quality of reporting is also essential to invest in, because this directly affects the relevance of information. The accuracy of the reports is as well fundamental. According to the results, manual reporting poses challenges, as the data processing is slow and the margin of error possibility increases. Therefore, it is essential to minimise this in future, as it is important to be able to produce consistent reports, in order to avoid misperceptions and ensure clear understanding of the reports. In addition, special attention needs to be paid to user friendliness, right level of detail and analysis to increase the reports scope of usability and meet the management information needs as well as possible.

What kind of management accounting reports should be produced in the future to support the management activity - what issues should be considered?

In light of the results, it is going to be even more important in the future to highlight the key information in the reports. Because more and more information will be available, careful consideration will be required to understand what kind of information should be reported in which form to bring the most value to the company. This is indispensable to enable efficient, informed decision-making.

To build value, the results show that in the future the organization will increasingly need to focus on producing analytical reports effectively. Because, this enables a deeper understanding of business situations and future prospects. Time has also become valuable in today's interactive world, and, thereby, it should be possible to get quickly the information required. This will be even further emphasized in the future to facilitate faster decision-making. Also, the ability to create customised reports on demand will be significant. Since they allow in certain circumstances, just the data and format that will meet the user's needs the best. Besides, it should be noted that active two-way communication is required in order to produce high-quality analytical reports cost-effectively.

How the reported management accounting information can better support in-formed and efficient managerial decision-making process?

In summary of the results, it can be stated that it would be good to pay attention to the flow of the reporting process in the future, so that the right information reaches the right recipient. Attention should be paid as well to keeping to the schedules to avoid delays in the reporting process, in order to leave management enough time to analyse the information. This requires all parties commit to staying on schedule. Smooth progress of the traditional monthly finance close process should also be ensured, in order to allow more time for interpretation and analysis of the information.

As well, it would be important to make assessments of the quality and content of the reports in order to guarantee the reports' usability and accuracy to support their relevance in decision-making. In addition, should strive to keep the reports clear and uniform, in order to assure their quality. In terms of the content, the reports will need to contain a more in-depth and analytical approach in the future to achieve the optimal benefits from the use of reports in decision-making. As a result of the abundance of information, will need to as well focus on clarity and compacting the reports to ensure the relevant information is displayed, so that it will be used in decision-making.

In order to develop the reporting to the desired direction, open communication and multidirectional flow of information is required. Everyone must understand the importance and the objectives of the reporting process and what their role is in this. As only together, can create the ground rules for constructive and cost-effective development. Because, particularly in today's challenging economic climate opportunities for additional resourcing are limited and development should therefore aim to build on the internally already existing organizational resources. In practice, the question is often of prioritization and effective organization of tasks.

Furthermore, the results indicate that more emphasis should be put on seeing the financial information as a strategic resource to reach a more holistic understanding of this in the organisation. Since, in the future understanding information as a strategic resource of the organization will be even more important with the increasing opportunities of new technological developments. Through the understanding of the strategic asset, organization strengthens and the ground for growth and development is fruitful.

7.2 Recommendations

Based on the results summarized above, the following recommendations are made to improve management accounting reporting in order to support managerial decision-making as effectively as possible and as well help create business value within the study organization.

The findings of this study suggest that more attention should be paid to *getting the right information to the right people in time* to support decision-making, because all did not receive the reports they needed. This is important because information can only acquire value through the ability to influence the decisions made by the users. This means that the utilization of a report is an important benchmark for its value, which is substantially affected by the availability of reported information on time. In addition to this it is also essential, as we have gone through, the information is relevant and accurate, to have value for the decision maker.

Considering the current information and technology driven economy, the significance of understanding information sharing and the practice is emphasized for organizations to stay competitive and increase profitability. Thus, it is particularly important to ensure clear distribution of information to make sure all would have the right tools available to do the job. This distribution of information should be consistent and clearly guided. It is also important to clarify, whom to ask for the missing information if necessary, so the lack of information does not affect the work. Openness and broad dissemination of information are also seen to strongly support organizational learning, sense making and creation of new knowledge for decision-making.

The study findings also indicate that it is vital to emphasize *the overall user experience*, to increase the reports usability in decision-making. The value for the end user is typically associated with the perceived usefulness. This supports the fact that the report value is closely linked with usability, which tends to strongly reflect the perceived satisfaction with the information. Usability itself means much more than just easy to use. Often this is evaluated against the user's requirements for success and satisfaction. Practically, this means understanding the situational aspects of management reporting needs and what may seem obvious that the reporting requirements are driven by the information recipients' needs, not the calendar or system processing cycle. That is to say, reporting needs to be increasingly tailored to the individual recipient.

Consequently, in today's global digital world, the reported information should be to an increasing extent readily available in an interactive environment, in order to, build a powerful real-time, high-quality distribution channel of information. This typically means dashboard type of reports presented in a web environment, which have been produced using business discovery platforms like Qlikview. That allow faster data processing capabilities to have the information constantly updated. Give users possibilities to apply various filters on the data to view the information from different perspectives and, additionally, bring together powerful visualization and real-time analysis opportunities to discover insights.

Based on the study results, it should be as well noted that *high-quality, multi-level communication and interaction* play an important role. Effective communication helps to see the common objectives of the organization. Open dialogue is clearly also seen to support better engagement and efficiency. Consistent, high-quality and multi-directional communication supports as well information sharing within the organization. Consistency and transparency are important factors in all organizational communication, but particularly in financial communication. Because effective financial reporting requires the figures to be communicated in a way that is meaningful and understandable to the target audience, otherwise it is just numbers with no real significance.

It is not just important that the right information reaches the right recipient, as efficiently as possible, but the information sharing and the depth of the interaction must be considered on many different levels in order to achieve the best results. This is one prerequisite to have the most accurate and timely reports available to support effective decision-making. The objective should be effective two-way communication, which provides a good framework for co-operation and building trust. Thus, providing an excellent environment for development and creation of added value for the business.

Additionally, the study results suggest focus should be given to adding *more analysis* to the reports, in order to bring a more in-depth view to support decision-making. Even reporting and analysis are sometimes used interchangeably, these are quite distinct from each other and it is important to note. Simply put, reporting is about converting data into information - the process of constructing, arranging, consolidating, formatting, and summarizing. Whereas analysis requires a more custom approach to interpret data at a deeper level to extract actionable recommendations – turn information into insights.

However, this is not the question about identifying which one, reporting or analysis, brings more value, instead it is important to understand the essential roles of both in the overall picture that should help support business success and growth. Reporting rarely alone leads to action and analysis can be thought of as building the bridge between data and action. Making the analysis does not guarantee the right decisions, activities on the basis of insights, business guidance in the right direction or that the teams will put the right choices to effective use in practice. However, it is a necessary step closer to action to realize the information potential as business value.

7.3 Suggestions for further research

It is important to carry out further research, to develop the management reporting to meet today's rapidly changing requirements. In light of the study results, one possible further research topic, which could be good to address, is how the usability of the management accounting reports could be improved. This could be done as a qualitative interview study, in order to collect from the reports' users the most comprehensive view of the direction in which reporting should be developed to make it the most user-friendly.

Another further research topic could be to examine the communication strategy, as well as, the best communication channels in the organization, so that the flow of information would be the most effective, comprehensive and the right information reaches the right recipient in a cost-effective manner. A third suggestion for further research, could be to explore the possibilities to streamline the monthly reporting process to allow more time for management to analyse the reported information.

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Appendix 1: Survey invitation

Dear All,

You are being invited to participate in a research study that is part of my master's thesis at Helsinki Metropolia University of Applied Sciences. The purpose of this research is to understand, how the reported management accounting information can better support efficient decision-making within the organization.

The responses will be held as strictly confidential and the participation is anonymous.

Your help would be greatly appreciated. To do so please click on the following link,
<https://elomake.metropolia.fi/lomakkeet/14913/>

Kindly note, the survey is open until the 27th of November 2015.

Thank you in advance for your contribution!

If you have questions regarding the survey or study, please don't hesitate to contact me.

Best regards,
Emma Butterfield

Appendix 2: Online questionnaire

Role of management accounting information in decision-Making

Thank you for kindly participating in this questionnaire.

This questionnaire is part of a master's thesis at Helsinki Metropolia University of Applied Sciences.

The aim of this research is to understand, how the reported management accounting information can better support efficient decision-making within the organization.

If you have any questions please contact: Emma Butterfield, emma.butterfield@tecnotree.com

Your responses will be held as strictly confidential and the participation is anonymous.

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Background Information

* In which region are you personally based?

--Select--

* Which of the following best describes your current position in the organization?

--Select--

How many years have you been in the organization?

- Less than 2 years
 2 - 5 years
 6 - 9 years
 10+ years

* Do you require reports containing financial information at work? Yes No

Why not?

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The Use of Financial Information

How often in general you use reports containing financial information at work?

- Monthly
 Quaterly
 Semi-Annually
 Annually

Please indicate how important it is to have reports containing financial information available to support in the following areas:

| | Very important | Somewhat important | Not very important | Not at all important |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| * Planning goals and objectives | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * Directing and controlling the performance | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * Allocating the resources | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * Motivating the team towards the organization's goals | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * Assessing the organizations competitive position | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * Developing long-term plans and strategies | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Which of the following statements most accurately describes how the available financial information is used within your organization?

- We put nearly all of the information that is of real value to good use
 We probably leverage about half of our valuable information
 Vast quantities of information go untapped

* Does my organization view information as a strategic asset? Yes No

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Quality of Management Accounting Reports

| | Yes | No | Remarks? |
|--|-----------------------|-----------------------|----------------------|
| * Do you receive the necessary management accounting reports on performance relative to established objectives? | <input type="radio"/> | <input type="radio"/> | <input type="text"/> |
| * Is the information provided in sufficient detail and on-time to enable carrying out decision-making efficiently? | <input type="radio"/> | <input type="radio"/> | <input type="text"/> |

Please indicate your opinion about the following statements considering the decision-making perspective:

| | Strongly Agree | Agree | Neither Agree Nor Disagree | Disagree | Strongly Disagree |
|--|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| * The information contained in the reports is adequate | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * The reports are clear and illustrative | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * The reports are easily comprehensible | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * The required information is readily available | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * The information received is up-to-date | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * I rely on accuracy of the reports | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * I am pleased with the present management accounting reports | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| * It is probable that I will act on the information in the reports | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

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Development Areas of Management Accounting Reports

Think about the information you require for decision-making and the management accounting reports available to you. Do you miss something in these reports?

What are typically perceived as challenges in your organization to extract value from the management accounting reports to inform decisions? Select up to three.

Access to the right information
 Information accuracy and reliability
 Timeliness of the reports
 Getting the information to the right people within the organization
 Quantity of information to identify what is essential
 Lack of analysis involved
 Lack of flexibility/interactivity

Other, what?

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Suggestions for Improvement in Management Accounting Reports

What kind of management accounting reports could increase the use and support better informed decision-making?

What opportunities do you see for your organization as the result of increased availability of information? Select up to three.

Increasing profitability
 Informing strategic direction
 Boosting productivity - utilization of resources
 Improving product/service quality
 Getting closer to customers
 Growing market share and revenue
 Streamlining business processes
 Reducing staffing

Other, what?

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Thank you for taking the time to complete this questionnaire. Your assistance in providing this information is very much appreciated.

Please submit your answers on the next page.

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