

# Implementing the Monitoring Activities Component of the COSO Framework

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Liisa Vollbeh  
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# IMPLEMENTING THE MONITORING ACTIVITIES COMPONENT OF THE COSO FRAMEWORK

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### Abstract

The purpose of the study is to examine how the Monitoring Activities component of the COSO Framework can be applied and implemented in a publicly traded company. The purpose of the monitoring component of the COSO Framework is to ensure the effectiveness of internal controls within an organization. This thesis will contribute to the understanding of the practical implications of the implementation of the monitoring activities. The thesis is carried out as a single case study with a constructive research approach in a Finnish based case company operating in both production and retail business. During the case study most important key processes, key control requirements and key controls are identified. The metrics for monitoring the key controls, Key Control Indicators, are developed.

The development of the Key Control Indicators is conducted with risk-based approach on the most important control requirements and controls in terms of the company's financial reporting. Key Control Indicators are developed by utilizing the company's existing controls and monitoring procedures. This study presents lessons learned from the implementation and suggests a reporting process for monitoring activities in the case company. The case research is analyzed and reflected in the light of the related literature.

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**Keywords** COSO, Internal controls, Monitoring, Financial Reporting

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### Tiivistelmä

Tämän tutkielman tarkoituksena tutkia kuinka COSO viitekehyksen seuranta osa-alueella tulisi käytännössä soveltaa ja ottaa käyttöön julkisen kaupankäynnin kohteena olevassa yrityksessä. COSO viitekehyksen seuranta osa-alueen tarkoituksena on turvata organisaation sisäisen valvonnan tehokkuus. Tämä opinnäytetyön tavoitteena on edesauttaa seurantatoimenpiteiden soveltamiseen liittyvien ilmiöiden ymmärtämistä. Tutkielma toteutetaan tapaustutkimuksena konstruktiiivisella tutkimusotteella suomalaisessa kansainvälisesti toimivassa prosessiteollisuuden yrityksessä, jonka toiminta-alueena on sekä tuotanto että tuotteiden vähittäismyynti. Toimeksiannon aikana yhtiön sisäisen valvonnan ympäristöstä tunnistetaan avainprosessit, avainkontrollivaatimukset ja avainkontrollit. Avainkontrollien seurantaan varten luodaan mittarit eli avainkontrolli-indikaattorit.

Avainkontrolli-indikaattoreiden kehittäminen toteutetaan riskilähtöisesti yhtiön taloudellisen raportoinnin kannalta tärkeimmille kontrollivaatimuksille ja kontrolleille. Avainkontrolli-indikaattorit pyritään luomaan käyttämällä hyväksi yhtiön olemassa olevia kontrolleja ja seurantamenetelmiä. Tämä tutkielma tuo esiin kokemuksia seuranta osa-alueen käyttöönotosta ja esittelee ehdotuksen seurannan tulosten raportointiprosessiksi esimerkkiyrityksessä. Tapaustutkimuksen tuloksia peilataan ja analysoidaan tutkielman alussa esitellyn kirjallisuuden valossa.

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**Avainsanat** COSO, Sisäinen valvonta, Seuranta, Taloudellinen raportointi

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## **LIST OF ABBREVIATIONS**

AC	Audit Committee
COFR	Control Over Financial Reporting
COSO	The Committee of Sponsoring Organizations of the Treadway Commission
ERM	Enterprise Risk Management
ICM	Internal Control Manager
KC	Key Control
KCR	Key Control Requirement
KCI	Key Control Indicator
KPI	Key Performance Indicator
KPrI	Key Process Indicator
SMA	Securities Market Act

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# 1 INTRODUCTION

## 1.1 Background and motivation for the study

Organizations have a growing need to control the risks related to the financial and operative objectives in a rapidly changing economic environment. An effective internal control is becoming strategically important in many organizations as it is proving to be a cost-efficient way to manage these risks in the everyday operations. (Kivelä 2013, Arwinge 2013, 110-111) The internal control systems need continuous attention in order for them to work as intended. (COSO 1994) Monitoring is also crucial for the management and the board of directors in providing them with the vital information about the performance and effectiveness of the internal control systems in order to be able to fulfill their oversight duties over internal controls. (Heikkala 2011)

Internal Control – Integrated Framework (COSO Framework) published by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in 1992 is one of the leading frameworks applied for designing internal controls for large scale business activities. The initial purpose of the COSO and the COSO Framework was to give organizations concrete tools to mitigate risks concerning the validity of financial reporting. The COSO framework has further been applied for business operations as well beyond financial reporting and COSO has recently published a revised version of the framework to support the changing business environment and control requirements. (COSO 2013)

The COSO Framework is comprised of five elements of which the first four form the basis for internal controls (Control Environment, Risk Assessment, Control Activities and Information and Communication). The fifth component, Monitoring Activities, is there to ensure that the internal controls do not deteriorate over time as well as to proactively identify any problems or threads concerning the validity of the financial reporting or other critical operational matters. (COSO 2013)

The Monit Inc. is a Finnish based, publicly traded company operating internationally in the processing industry. It has operations both in production and in retail business. The case company is in a process of implementing the monitoring component of the internal controls according to the COSO Framework. The Monit Inc. has built a formal internal control system and documentation under the heading Control over Financial Reporting (COFR). The COFR has been developed by using the guidelines of the COSO Framework, but the formal implementation of the monitoring component has yet been missing. However, the requirements arising from several sources have implied the importance of the formal monitoring procedures.

Most recently, this awareness emerged from the internal audit findings and it was also highlighted in the Audit Committee meetings. The internal audit function of the case company has given a high level recommendation for the year of 2014 to set up the monitoring of the internal controls and the Audit Committee has also stated that the implementation of monitoring activities is the prime priority for internal controls development in 2014.

In a broader perspective, the overall public interest and requirements for transparency and compliance have increased which has put further pressure on companies to have proper internal controls in place. The foundations for internal controls are laid in the first four aspects of the COSO Framework; the Control Environment, Risk Assessment, Control Activities and Information and Communication. However, the fifth component, the Monitoring Activities, tells us whether the internal controls set by the framework are working properly and whether or not some corrective measures ought to be executed within the company. (Orenstein 2009)

In addition, the regulations for internal controls have been tightened during the past decade, when the financial crisis and scandals have emerged after misbehaves due a lack of proper internal controls. In Finland, the Finnish Corporate Governance Code issued by the Securities Market Association gives recommendations for the listed companies on informing how the internal controls of financial reporting have been organized and implemented. (Corporate Governance Code 2010) This has encouraged the Finnish listed companies, the case company included, to develop their internal controls and to organize them in accordance with some established framework.

Even though the Sarbanes-Oxley Acts (SOX) section 404, which presents the requirements for managing and reporting the internal controls of the listed companies in the United States, is not in effect in Finland it nevertheless sets a benchmark for the internal controls of the European listed companies as well. According to SOX the internal controls need to be organized according to some internal control framework. As the COSO Framework is one of the most established frameworks for internal controls for many companies, its implementation is an important and extremely practical issue to tackle. (Altamuro & Beatty 2010)

## **1.2 Research objectives and structure**

The purpose of the study is to develop a method applicable in the case company Monit Inc. for formally implementing the monitoring activities component of the COSO Framework. This study was commissioned by the Monit Inc. with the requirement of a final output of key control indicators (KCIs) in order to measure the effectiveness of the internal controls. Therefore the research questions of this study are the following: *What are the key determinants in developing and implementing the Monitoring Activities component of the COSO Framework and how the effectiveness of the internal controls is monitored and measured?*

The background for this case study is built by examining the theoretical framework for monitoring the internal controls over financial reporting. This is done during the literature review where an overall understanding on the COSO Framework and its monitoring component in particular is developed. The study of the different COSO Frameworks is complemented by examining how the framework has been applied in different settings, as well as by locating the concept of internal controls in the broader field of management control systems.

In the empirical part of the study, an implementation method is constructed in a case environment. The case assignment includes selecting the most important key processes defined in the company's Control Over Financial Reporting function, as well as the key control indicators (KCIs) for these processes for which the monitoring will be planned. In the internal COFR documentation, the Monit Inc. has already identified the company's key processes, the key control requirements and the key controls. In this case study the target is to select the most

important ones of these processes, control requirements and controls and to design the formal monitoring procedures for these items.

In addition, the project contains setting the rating scale for the selected KCIs, developing the reporting process for the monitoring activities and finally setting the guidelines for how the corrective measures should be identified and implemented. The expected findings from the empirical part of this study are the following: how in practice the monitoring activities component can be implemented, what kind of questions arise during the process and how these questions are tackled.

The Monit Inc. is a suitable company for the case to study for multiple of reasons. The company is one of the major public interest companies in Finland and a listed company, which has operations all over the world and thus has an inherent incentive for having proper internal controls in place to ensure lowest possible risk levels in order to have a stable and reliable base for company valuation. It also has a complex production process, together with retail operations, operating in multiple countries, hence the control activities need to be properly implemented in order to ensure the consistency and validity of the financial reporting. Furthermore, the Monit Inc. has already developed the groundwork for the framework so that the other components have been identified and put into practice.

### **1.3 Research method, design and limitations**

The methodology selected for this study is the constructive research approach, which means that a solution for a known business case was built based on the examined theoretical background. The methodology for the case assignment is explained in more detail in chapter 4.2.

The case study was executed so that the author was involved with the internal process of identifying and developing the metrics for the key control indicators of the Monit Inc. All the empirical evidence was gathered during the project. The case assignment was conducted in a close cooperation with the main responsible person for the internal controls of the Monit Inc.

In practice, the gathering of the research material was done in a set of workshops, which were complemented with additional interviews and discussions with the representatives of the Monit Inc. Also, the empirical evidence consisted of multiple documents provided by the case company as well as the information available in the company's intranet.

By analyzing the results from the workshops, as well as all the other evidence, a construction was formed on of how the monitoring activities component of the COSO Framework could be applied in this particular case environment. The construction consisted of a proposal of what kind of metrics could be developed for each of the selected processes and how the results of the monitoring should be further processed within the company.

Although this thesis is a single case study, the results may be generalized and applied for other similar situations and hence the study will provide at least limited information on what kind of metrics could be implemented in a company with similar key processes and what kind of challenges or critical aspects ought to be taken into account. However, the limitations are related to the nature of single case study. Even though we get in depth information on how the monitoring is implemented in this particular company we, in fact, remain unaware of how generalizable the results actually are. In addition, this study is conducted in a relatively short period of time so the long term effects and implications cannot be examined within this study. The same applies also to the internal implementation since, even though we will find out how the crucial control issues are perceived at this point of time, we do not know whether this will hold within the company in the long term.

The thesis is structured into the following chapters. Chapter 2 *COSO Framework for internal control* summarizes all the relevant documents authored by COSO with the emphasis on the ones providing information on monitoring. In chapter 3 *Internal controls and monitoring* the theoretical background is further extended by examining the different applications of the COSO Framework as well as the field of management control in general. In the end of chapter 3, the theoretical framework is condensed in order to give a stepping-stone for building the construction in the case part of this thesis. The structure, methodology and purpose of the case assignment is introduced in detail in chapter 4 *Case research design*. The chapter 5 *Case*

*research at Monit Inc.* describes the case company and the results of the case assignment. In chapter 6 the case results are analyzed and in the chapter 7 the final conclusions are drawn from the study.

## 2 COSO FRAMEWORK FOR INTERNAL CONTROL

### 2.1 History and publications of the COSO

The Committee of Sponsoring Organizations of the Treadway Commission was formed in 1985 to examine the reasons for misconduct and to make recommendations for different parties on how to prevent fraudulent financial reporting. The forming of COSO was a response to the documented increase in fraudulent financial reporting. (Landsittel & Rittenberg 2010). The sponsoring organizations were originally supporting the National Commission on Fraudulent Financial Reporting<sup>1</sup> in its mission to study the causal factors behind the fraudulent financial reporting. The sponsoring organizations were the American Accounting Association (AAA), the American Institute of Certified Public Accountants (AICPA), Financial Executives International (FEI), The Institute of Internal Auditors (IIA), and the Institute of Management Accountants (IMA), formerly known as the National Association of Accountants. (About Us, COSO 2014) As a result of the commission's work a Report of the National Commission of Fraudulent Financial Reporting was published in 1987. One of the recommendations given in the report was that an internal control framework for the public companies should be developed in order to prevent fraudulent financial reporting. (COSO 1987)

The COSO continued to elaborate on the topic and published the first Internal Control – Integrated Framework in 1992, which was later republished in 1994. Since then the COSO has issued several publications with increased pace over the recent years focusing on the different aspects of internal control issues and enterprise risk management (ERM) issues. Table 1 outlines the issued publications from 1987 to 2013.

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<sup>1</sup> The first chairman of the National Commission of Fraudulent Financial Commission was James C. Treadway, Jr., the executive vice president and general counsel of Paine Webber Incorporated, hence the naming the Committee of Sponsoring Organizations of the Treadway Commission.

Table 1 COSO Projects, modified based on Landsittel & Rittenberg 2010

This table illustrates the COSO publications categorized by their nature and contents.

	<b>Fraudulent Financial Reporting</b>	<b>Internal Control</b>	<b>Enterprise Risk Management</b>
<i>Conceptual Frameworks</i>		Internal Control – Integrated Framework (1992)  Internal Control – Integrated Framework (2013)	Enterprise Risk Management – Integrated Framework (2004)
<i>Implementation Guidance and Thought Papers</i>	Report of the National Commission on Fraudulent Financial Reporting (1987)	Internal Control Issues in Derivatives Usage (1996)  Internal Control Over Financial Reporting: Guidance for Smaller Public Companies (2006)  Guidance on Monitoring Internal Control Systems (2009)	Effective Enterprise Risk Management: The Role of the Board of Directors (2009)  Strengthening Enterprise Risk Management for Strategic Advantage (2009)
<i>Research Studies</i>	Fraudulent Financial Reporting: 1987–1997 – An Analysis of U.S. Public Companies (1999)  Fraudulent Financial Reporting: 1987–2007 – An Analysis of U.S. Public Companies (2010)		

COSO has published three conceptual frameworks of which two focuses on internal controls and one on ERM. To complement these frameworks COSO has also developed several guidance and thought papers, which provide deeper insight on how these frameworks should be used and applied in different contexts.

As the internal controls of Monit Inc. is broadly based on the COSO Framework the documentation provided by the COSO itself will form the basis of understanding the key questions of this study. Hence we will develop in depth understanding on the document Internal Control — Integrated Framework in its 1992 version as well as of 2013. These publications consist of detailed descriptions of the contents of the framework and they will be scrutinized at generic level but more attention will be given to the Monitoring Activities section of these documents. The emphasis will however be on the earlier version of the framework since Monit Inc. has used it as guidelines for designing the internal controls.

Furthermore, as the monitoring aspect of the framework is in focus we will also analyze the COSOs document Guidance on Monitoring Internal Control Systems (2009). The purpose of the document is to give detailed guidance on how to implement the Monitoring component of the COSO Framework. It provides instructions on how to establish the foundations for monitoring, how to design and execute monitoring procedures and how to asses and report results of the monitoring process.

## **2.2 Original framework 1992**

The original Internal Control – Integrated Framework from 1992 defines internal control as a process, which is effected by people: by the board of directors, management and other personnel (COSO 1994, 3). The process aspect suggests that internal control should not be regarded as one-time event but as an activity, which penetrates the everyday operations of the entity. The COSO states that internal control is not something that is artificially added upon the normal activities of the organization but it should be an integrated item of the entity’s infrastructure and as such

serve the fundamental business purposes of the organization. In this sense, the internal controls should be built into the everyday operations. When this is done, the internal controls can at best have a significant impact on how the qualitative objectives of the organization are defined and met. While the management and other people in the organization are responsible in their part as well as effected by the internal control it is the board of directors, which provides direction and has the primary oversight responsibility on internal controls. (COSO 1994, 14-15)

The three categories – operations, financial reporting and compliance – form a one of the three aspects of the conceptualization of the COSO Framework (see figure 1). Internal controls can be expected to provide reasonable assurance on the entity’s compliance with the laws and regulation and on the reliability of the financial reporting of the entity. This is because the compliance and reliability of the financial reporting are dependent on how the entity itself and the activities under its control are performing. The operational objectives are, however, largely dependent on external events as well as the business decisions made by the management so, from this aspect, the internal controls cannot safeguard business from failing. (COSO 1994, 39)



Figure 1 COSO 1992 Cube (COSO 1994, 19)

As we can further see from figure 1, the COSO Framework consists of five different components, which intersect with each of the three above-mentioned categories. According to COSO these components are also interrelated with each other. (COSO 1994, 16)

### **2.2.1 Control environment**

The control environment forms the basis of the framework and as such, it is the foundation for all other components. It sets the tone of the organization by providing the infrastructure for accepted behavior as well as managerial judgments. Control environment is formed of the integrity and ethical values in the organization, which in turn are, to a large extent, set by the management of the organization. COSO states that the level of integrity and ethical values of the personnel set the higher limit for organization's internal controls; it cannot rise above the values of the individuals. (COSO 1994, 23) The top management, and the CEO in particular, is responsible for setting the corporate culture, and therefore the ethical framework is often referred to as the tone-at-the-top.

The ethical values and integrity are not only promoted by statements of code of conduct but by setting an example of ethical behavior and by the actions of the top management. (COSO 1994, 24-25, 26) Furthermore, the board of directors and the audit committee play an integral part in determining the organizations control environment. (COSO 1994, 26-27) Control environment is also manifested in the management's commitment in advancing the appropriate level on competence regarding the required knowledge of particular positions (COSO 1994, 26). Another aspect of the control environment is how the organizational structure together with the inbuilt authority and responsibility areas support the internal controls. The defined limits of authority and responsibility are essential in building a low-risk control environment (COSO 1994, 27-28)

### **2.2.2 Risk assessment**

The second level of the COSO cube represents the risk assessment component of the COSO Framework. According to COSO, risk assessment should be done in parallel to defining the organizational objectives and it contains the preliminary analysis of how the risks should be

managed. Risks always occur in relation to the objectives of the organization and therefore the objective setting is a prerequisite for risk assessment. (COSO 1994, 33)

### ***2.2.2.1 Defining objectives***

Objectives range from the entity-wide strategic objectives to activity-level objectives, which again can be translated into more specific critical success factors by business units, functions or individuals to perform in order to achieve the strategic objectives. As well as the main components of the COSO Framework, the objectives can also be categorized into operations, financial reporting and compliance objectives. (COSO 1994, 33-34)

Financial reporting objectives focus on factors affecting the preparation of reliable information published in the entity's financial statements. The reliability of the financial information is achieved when the entity complies with the externally set, generally accepted accounting standards and when the financial statements reflect the actual financial state of the entity in terms of financial position, operational result and cash flows. (COSO 1992, 35) Often the reliability of the financial statements is evaluated from the point of view of different stakeholders of the entity. The information given in the financial statements is considered to be reliable when the stakeholders' decision-making would not be affected by enclosing additional information to the financial statements. This is the essence of the true and fair view, the basic principle and requirement for financial presentation, which should be the ultimate objective of financial reporting. (The Accounting Standards Board 1999)

### ***2.2.2.2 Identifying and analyzing risks***

Based on the objectives the entity needs to identify and analyze the risks that are related to achieving these objectives. According to COSO the process of identifying and analyzing risks is a critical part of effective internal controls. (COSO 1994, 40) Management may identify the risks by analyzing past failures, the quality of personnel or the changes in the business environment as well as the different aspects of the entity's operations, like the extent of foreign operations or the complexity and the significance of certain attributes of the organization. (COSO 1994, 41)

After identifying the entity level factors contributing to risks and analyzing the significance of these factors, the management can further link the risks at more detailed level in the organization. When the risks are identified at activity level, they become more manageable and this helps to focus the procedures in order to mitigate the risks. (Ibid.) After identifying the risks at entity and activity-level, the risks are analyzed in relation to the two dimensions, the significance and the likelihood of the risk realization, as well as already considering the ways of how these risks should be managed.



Figure 2 Dimensions for risk analysis

As the Figure 2 presents, the risks analysis should result an assessment of how much effort should be put into the management of the particular risk. The risks with low likelihood and low significance when realized should not receive much attention from the management but the focus should be given to the ones that are most likely to occur and might have significant impact on the entity. These items are usually easier to analyze than the ones with moderate impact and likelihood. The assessment of these risks needs to be done rationally and by using appropriate methods for analyzing the potential costs if the risks are realized. (COSO 1994, 42)

### **2.2.3 Control activities**

COSO defines control activities as the policies and procedures to ensure that the management instructions for managing risks are appropriately carried out (COSO 1994, 49). The actions management decides to initiate in order to manage risk serve as the points of reference for designing the control activities. Control activities should be integrated into the processes for them to be effective and feasible for the purpose. Thus, the control activities and their practical implications should not be superficially implemented on top of the risk management processes or the operational processes but rather built into them. (COSO 1994, 51-52)

There are many different types of control activities and many different classifications developed of these activities. For example, control activities can be preventive or detective, or they can be manual or computerized, just to name a few. Therefore, the actual procedures may take a variety of forms depending on the situation and the purpose of the control activity. (COSO 1994, 49-50)

COSO also emphasizes the contextual nature of the control activities. Control activities may differ at large extent between two seemingly identical companies, since they are managed by different people who might make different kind judgments of the surrounding circumstances. Moreover, the control activities are affected by the culture and the structure of the organization, as well as the particular industry and the operating environment, so therefore the internal controls may take very different forms depending on the organization. (COSO 1994, 55)

### **2.2.4 Information & communication**

The information and communication component of the COSO Framework enables the organization to implement the internal control system and directs the personnel to carry out their responsibilities. (COSO 1994, 59) COSO emphasizes the importance of relevant information in order to control the entity's activities. This means that the organization should have an access not only to strictly historical financial and non-financial data but also to information, which indicates the early warnings as well, in order to make important changes to processes and control activities. (COSO 1994, 60)

In terms of internal controls, the internal communication flows are the most important for the organization in order to manage the control activities and to direct the processes within the organizations. The communication should make clear that the employees need to take attention to the causes of unexpected events in the process and to clarify how the activities within the organization are interrelated with each other. (COSO 1994, 63) This is probably particularly important in large organizations where different units may perform separate tasks isolated without really having communication and knowledge about the effects their duties have on other units' work.

If the time of publishing the initial Framework (1992/1994) is not taken into account, the aspects, which are highlighted in terms of the accessibility and timeliness of the information, may in some respect seem outdated. COSO emphasizes the possibilities provided by the integration of different information systems and the strategic significance this may have on the company's success. (COSO 1994, 60-61) The use of enterprise resource planning (ERP) systems, at least in some extent, is rather a presupposition than an option in the current business environment when the company in question is not a small or medium sized. The current challenges related to the accessibility and timeliness of the information have then more to do with how to filter out the relevant information from the vast amount of data available.

### **2.2.5 Monitoring**

The purpose of the monitoring component of the COSO Framework is to ensure that the internal controls are operating effectively. This means that the personnel regularly needs to evaluate the design and the operation of the controls to see if they are still viable and effective in order to mitigate relevant risks in the process. COSO distinguishes the ongoing and separate evaluations as the two ways of how the monitoring could be executed. Ongoing evaluations are procedures, which are built into the normal everyday operations of the entity and as such, they are most effective to identify any control deficiencies and to direct the development of control activities. Separate evaluations are carried out less frequently and the need for separate evaluations is considered in relation to the risks associated to the process and the effectiveness of the ongoing evaluations. (COSO 1994, 69)

In practice, the ongoing monitoring activities take multiple different forms but they are usually built upon different reconciliations and comparisons between different data sources. Segregation of duties is another common way to control and monitor the coherence of the information and the validity of recorded transactions in the data systems. (COSO 1994, 70-71)

The separate evaluations may focus on evaluating the entire internal control system of the organization or on some relevant part of it. Often the effectiveness of the ongoing monitoring is evaluated at the same time. The selection of the processes needed for separate evaluation should be done based on the risks associated to them and conducted as a self-assessment by people responsible for the specific area. Often the internal auditors evaluate the internal controls as a part of their duties and this can be seen as a one form of separate evaluations. (COSO 1994, 71-72)

In the end, monitoring, either ongoing or separate, provides information on potential or real control deficiencies in the internal control system. COSO defines control deficiency as “a condition within an internal control system worthy of attention”. As the definition is extremely wide, it gives an opportunity to report several different types of observations that have arisen during the monitoring process. (COSO 1994, 74) Nevertheless, generally it can be noted that anything that may preclude the organization to reach its objectives should be reported as a control deficiency. However, one needs to consider what kind of deficiencies should be reported to management level and what should be left managed at lower levels of the organization. The reporting process should in any case always reach at least one level up from the one directly responsible for the control in order to provide sufficient oversight and support to make necessary improvements to the control activities. (COSO 1994, 75) In order to avoid unnecessary informing and inflation in the value reported information COSO recommends that certain protocols should be established to guide what kind of deficiencies are reported to management or audit committee level. (COSO 1994, 76)

## 2.3 Monitoring according to the 2009 COSO Monitoring Guidance

COSO has dedicated a special publication for the monitoring component of the COSO Framework, *Guidance on Monitoring Internal Control Systems (2009)*<sup>2</sup>, in order to help the organizations to utilize its possibilities effectively. Observations showed that organizations are not using the existing control procedures to support their conclusion on the adequacy of the internal control system but they were implementing unnecessary procedures on top of the existing ones. Some other organizations lacked to implement the monitoring component on ongoing basis and therefore were forced to make costly year-end evaluations. The *Guidance on Monitoring Internal Control Systems (COSO Monitoring Guidance)* was developed to help organizations to design and implement the monitoring activities component effectively. Its purpose is to reinforce and clarify the principles presented in the previous frameworks and not to add anything new to these instructions. It is directed to guide the monitoring of internal control over financial reporting, although it can be applied on the other perspectives of the COSO Framework as well. (COSO 2008, 2)

COSO argues also that if the monitoring component is absent or inadequate, the internal control system will naturally deteriorate over time even though it initially has been efficient. (COSO 2008, 4) According to COSO, the process for establishing internal controls should include the following steps: setting organizational objectives, identifying the risks to achieve these objectives, prioritizing the risks, and, designing and implementing responses to the risks. Monitoring can be either subsequent to these steps or implemented in conjunction with the design and implementation step. (COSO 2008, 6)

COSO builds the guidance on monitoring on several key concepts, which are linked with the different components of the monitoring process. The monitoring process in *COSO Monitoring Guidance* is divided into three parts, which are (1) Establish a Foundation, (2) Design & Execute

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<sup>2</sup> In this thesis the Exposure Draft published in June 2008 is used as a reference instead of the final document from 2009

and (3) Assess & Report (COSO 2008, 7). In the following, these different parts are described in brief while the most attention is given to the second part.

### **2.3.1 Establish a foundation for monitoring**

The organizational structure needs to support the monitoring. In particular, the leadership roles for the different aspects of the internal control need to be identified in order to have clear responsibility areas established. (COSO 2008, 13) The ultimate responsibility for the effectiveness of the internal controls lies on the board of directors, but the management is responsible for its practical implementation and, depending on the size of the organization, either conducting the monitoring procedures or organizing it under its supervision. (COSO 2008, 11)

Usually an organization has an authorized person – an evaluator – to manage the monitoring process and to draw conclusion of the effectiveness of the internal control system. These evaluators need to be both competent and objective. With the competence, COSO refers to the evaluator's need to have proper understanding of the risks that need to be managed and how the controls and related processes are intended to function. This is necessary since the evaluator needs to be able to identify the control deficiencies as well as to analyze the root causes for these. (COSO 2008, 10, 11) Objectivity means that the evaluator needs to be in a position where he does not have to concern about personal consequences when managing the monitoring, nor have any conflicts of interest related to it (COSO 2008, 11).

COSO distinguishes the objectivity of the evaluator from the objectivity of the persons executing the controls and providing the information for the evaluator. The objectivity of the evaluator is illustrated with the continuum from self-review, peer review, supervisory review to impartial review, Although the self-review is perceived as the less objective, it may be the most effective to notice control deficiencies at early stage. The impartial review is usually conducted by a third party evaluator. The peer and supervisory review in the between are usually the most effective and efficient ways to monitor the internal controls since they are closely involved with the controls exposed to ongoing monitoring procedures. (COSO 2008, 12)

Final component in establishing the foundation is to develop a baseline understanding of the internal control effectiveness. If the organization does not have this baseline understanding, it may need to go through an extensive evaluation of the adequacy of controls in the areas of meaningful risks. This is important for the further development of the internal controls and monitoring. The effectiveness of the internal control system changes with the changes in the environment or in the internal operation of the organization. (COSO 2008, 14) The monitoring should be designed in a way that supports the identification of these changes. According to COSO, this is the foundation of continuous control baseline identification (COSO 2008, 15)

### 2.3.2 Design and execution of monitoring

The way in which COSO Monitoring Guidance approaches the design and execution of the monitoring is captured in the following figure.

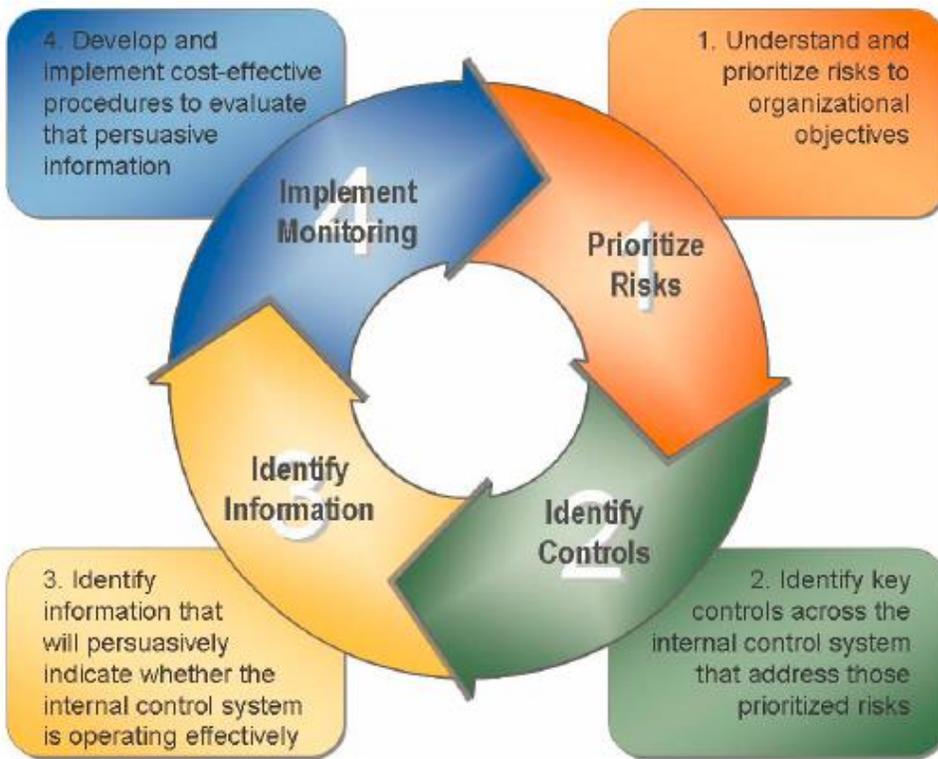


Figure 3 Monitoring Design and Implementation Progression (COSO 2008, 18)

The four successive steps – prioritizing risks, identifying controls, identifying information and implementing monitoring – should be gone through in order to warrant necessary level of support for the effectiveness of internal controls. These steps are prescribed in more detail in the following.

### ***Risk prioritization***

The risk assessment was already discussed in chapter 2.2.2. The COSO Monitoring Guidance adds to it that the prioritization should be done disregarding the effects of control activities, meaning that the risks should be considered without the presence of the internal control. This way it is guaranteed that the monitoring efforts are directed to those controls that mitigate the most important risks. (COSO 2008, 20)

### ***Control identification***

In order to execute effective monitoring you need to build an understanding of how the control system is designed to work and how the failure of the system will affect the organizations objectives if not detected on time. Therefore, the identification of the key controls needs to succeed the risk assessment with the target to identify the controls that best support the management conclusions of the control efficiency. This does not mean that some controls would be deemed as less important than others, but the focus is find the most meaningful controls to be exposed for monitoring. (COSO 2008, 22)

In the COSO vocabulary, Key Controls are the controls that have either the highest risks and are the most likely to fail, or the ones that can prevent or detect other control failures (COSO 2008, 22). There are several examples given how to identify these Key Controls and for instance previous control failures may indicate an elevated risk that the control should be exposed to monitoring. Another example is the division between manual and automated controls: the manual controls are more dependent on the human judgment and therefore more vulnerable than the automated controls. Automated controls have often the monitoring integrated to the system and therefore the manual controls should receive more attention when the monitoring procedure are being designed. (COSO 2008, 23)

### ***Identification of persuasive information***

The third step in the monitoring design process is related to the quality of the data used in monitoring. COSO clarifies the concept of *persuasive information*, which should be brought out by the monitoring procedures. The persuasive information is something that is both suitable and sufficient in order to give adequate support for making the management conclusions of the effectiveness of the control system. The suitable information is explained by three more concepts: relevance, reliability and timeliness. (COSO 2008, 27)

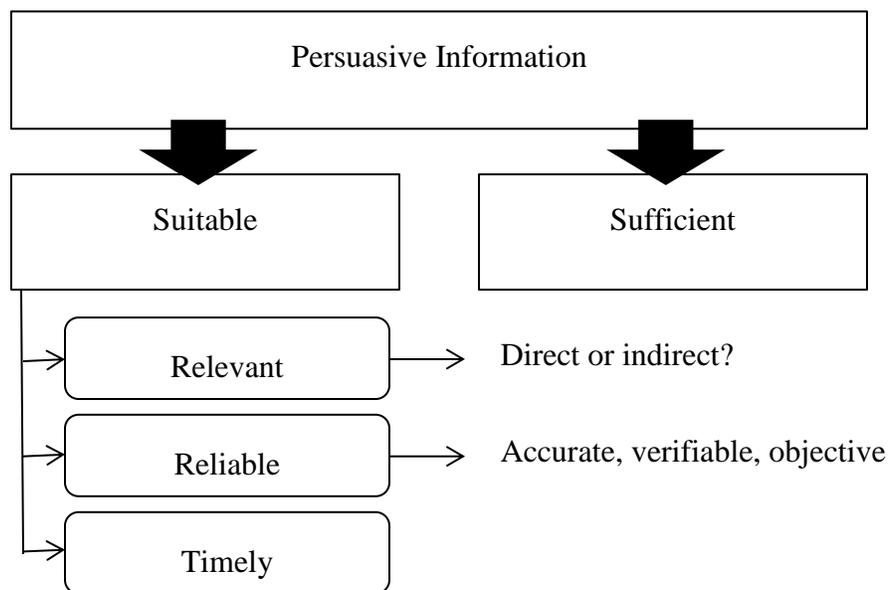


Figure 4 Persuasive Information according to COSO Monitoring Guidance

The relevance of the information gathered through monitoring can be judged by how closely the information connected to the control in question. Direct information reveals the concrete outcomes of the control. Indirect information is something through which it may be inferred that the control is efficient. Indirect information may support the monitoring of the control system but it can provide only limited affirmation on the effectiveness of the internal controls by itself. (COSO 2008, 28-29)

The reliability of the information is related to the accuracy and verifiability of the data and to the objectivity of the source of information. COSO argues that the objectivity may be reduced if the source of information is informed in advance that the control is being monitored. The objectivity may also be compromised if there is time for the person executing the control to review and correct the documentation before handing it out to the evaluator (COSO 2008, 30-31) The suitability of the information is also assessed by how timely to data is for making management judgments on the control system. (COSO 2008, 31) Sufficiency is primarily the quantitative assessment of the data: is the data adequate for making management judgments. (COSO 2008, 32)

COSO later acknowledges the cost-benefit viewpoint to the implementation of the monitoring activities. Monitoring can be executed by using either external or internal resources. The internal execution is commonly considered more inexpensive but by having external evaluator the organization can increase the objectivity of the monitoring results. The same goes with the use of direct or indirect information. Effective monitoring which produces reliable direct information may contribute to lower audit fees, since the external auditors can then better utilize the monitoring results. Although the indirect information is usually more inexpensive, the information value it generates is respectively lower. (COSO 2008, 49)

### ***Implementing the monitoring procedures***

COSO repeats the guidance given in the 1992 Framework, that the monitoring procedures may be executed through ongoing monitoring or separate evaluations. The advantage of the ongoing monitoring is that it is often implemented in real time, thus providing information by which the control deficiencies may be identified and corrected at early stage. (COSO 2008, 38)

The separate evaluations are done periodically, but the methods may be similar to the ongoing monitoring. They are also often conducted by different people than the ongoing monitoring procedures and therefore the separate evaluations are considered to be more objective. Through the separate evaluations it is also possible to derive how well the ongoing monitoring procedures are performing. (COSO 2008, 38-39) The interval between the separate evaluation is dependent on the risk assessment done earlier as well as the level of persuasiveness of the information

received from the ongoing monitoring activities: the more risky the control is perceived or the less persuasive the information is the more often the separate evaluations should be conducted (COSO 2008, 40)

### **2.3.3 Assessing and reporting the results**

The results from the monitoring activities should either confirm the expected judgments concerning the effectiveness of the control system or reveal control deficiencies needing corrective actions. The identified control deficiencies should be prioritized in order to help the reporting process and to give relevant information to relevant quarters within the organization. (COSO 2008, 45) If the likelihood of an error or default in the organization's objectives is elevated due to the control deficiency it will probably be evaluated as high priority. Other factors mentioned affecting the priority assessment are the presence of other compensating controls, the effect of multiple simultaneous control deficiencies or the effects on the other organizational objectives. The last example means that even the control deficiency does not have a direct effect on the objective it is primarily meant to control (the financial reporting, for instance) it may still be regarded as high priority because of the implications it has on the effectiveness of the process. (COSO 2008, 45-46)

The results of the monitoring activities need to be reported to the relevant parties within the organization. Some of the results may be relevant only to a specific part of the organization while other results are affecting the entity-wide objectives. Therefore, the reporting needs to be considered accordingly as well as the prioritization assessments need to be made with relation to the different levels of organization. Nevertheless, the reporting should be targeted to the personnel directly responsible for the control and at least to a one level above in order to provide support in correcting the control deficiencies. (COSO 2008, 47) The most important control deficiencies, which affect the achievement of the entity-wide financial reporting of operational objectives need to be reported to the senior management and to the board (COSO 2008, 47).

According to COSO “[t]he ultimate goal of monitoring is met when organizations use the most *efficient* means possible to gather and evaluate appropriately persuasive information about the

*effectiveness* of the internal control system in addressing meaningful risks to organizational objectives.” (COSO 2008, 53) The effectiveness can be evaluated by examining how long time it has been since the organization has discussed the risks facing the different aspects of reporting, whether there has been control failures effecting the organizational objectives that haven’t been detected on time or if there are audit findings that indicate control deficiencies. The factors affecting the efficiency evaluation include the assessment of the monitoring costs compared to the corresponding risks or examination of whether there are duplicate monitoring efforts on areas, which do not present significant risks to the organization. (COSO 2008, 53-54)

## **2.4 Updated framework for internal control 2013**

The original COSO Framework was developed and published in 1992, over two decades ago, and although the basic structure and idea behind the framework has not changed, there has been a major shift in the business environment. The project for updating the COSO Framework took five years and the purpose of the project was to modernize the framework to ensure its relevance. (McNally 2013)

The different changes that have affected the use of the COSO Framework include globalization, increased outsourcing, complexity of the changing regulations, increased use of technology and the growing public expectations for integrity and transparency of the organization. (Lähdemäki 2013) There were also some intrinsic reasons for updating the framework. The emphasis of the 1992 version was on explaining the different concepts of internal control, which are now considered almost as common knowledge. There was also a need to express the underlying principles of the different components more explicitly than it was done in the first version of the framework. Moreover, the guidance given in the 1992 framework was best applicable in the context of financial reporting. The other aspects, compliance and operative objectives together with the non-financial reporting, had also become more relevant for managing the internal control and therefore the focus needed to be more balanced in the guidance as well. (McNally 2013)

In spite of the development of the updated framework, the underlying fundamental concepts of the original framework have not changed. COSO has given time until the December 15<sup>th</sup> 2014 to transit from the old version to the new framework, but acknowledges the use of 1992 valid even after that. The organizations only need to disclose which version they are using in their internal controls. (McNally 2013)

There have been only minor changes to the COSO cube, the most visible being the replacement of the Financial Reporting objective with Reporting, suggesting that the scope of internal control needs to cover all the reporting of the organization, including internal and non-financial reporting. The clearest reformation of the COSO Framework is seen in the explicit formulation of the 17 principles related to the each of the five components. For the Monitoring Activities component, the following two principles are formulated:

The organization:

16. Selects, develops, and performs ongoing and/or separate evaluations to ascertain whether the components of internal control are present and functioning.

17. Evaluates and communicates internal control deficiencies in a timely manner to those parties responsible for taking corrective action, including senior management and the board of directors, as appropriate.

(COSO 2013)

These principles were apparent also in the original framework and therefore the updated framework does not significantly change the outlook on monitoring.

Furthermore, COSO gives several points of focus for each of the principles. For the principle 16 the following points of focus are formulated:

[Organization] **Considers a Mix of Ongoing and Separate Evaluations** – Management includes a balance of ongoing and separate evaluations

**Considers a Rate of Change** – Management considers a rate of change in business and business processes when selecting and developing ongoing and separate evaluations.

**Establishes Baseline Understanding** – The design and current state of an internal control system are used to establish a baseline for ongoing and separate evaluations.

**Use of Knowledgeable Personnel** – Evaluators performing ongoing and separate evaluations have sufficient knowledge to understand what is being evaluated.

**Integrates with Business Processes** – Ongoing evaluations are built into the business processes and adjust to changing conditions.

**Adjust Scope and Frequency** – Management varies the scope and frequency of separate evaluations

**Objectively Evaluates** – Separate evaluations are performed periodically to provide objective feedback.

(COSO 2013)

For the principle 17, the points of focus are the following:

**Assesses Results** – Management and the board of directors, as appropriate, assess results of ongoing and separate evaluations.

**Communicates Deficiencies** – Deficiencies are communicated to parties responsible for taking corrective action and to senior management and the board of directors, as appropriate.

**Monitors Corrective Actions** – Management tracks whether deficiencies are remediated on a timely basis.

(COSO 2013)

These principles and key characteristics of the monitoring activities are similar to the elements described in the preceding chapters. Although the COSO Framework has been modified and updated to meet the requirements of today's business environment, the guidance given for monitoring has not changed. The document *COSO Framework, Guidance on Monitoring Internal Control Systems* is still valid in the updated framework environment. Organizations need to develop the internal control systems in order to comply with the updated framework but the monitoring implementations made on the basis of the original framework continue hold in the new environment. (Protiviti Inc. 2014)

## **3 INTERNAL CONTROLS AND MONITORING**

The following chapters elaborate on the framework and guidelines given by COSO. First, in chapter 3.1 the topic of internal control assessment is covered by studying the conceptualization by Ahokas (2012) and the more hands on approach by KPMG (2005). These are accompanied by some research findings from academic discussions. Furthermore, we find support from Jääskeläinen et al. (2013) on how the metrics for assessment could be constructed. The chapter 3.2 focuses on more general topics around internal controls, first by linking the concept to the wider context of management control, then presenting some research topics on internal controls and monitoring and finally describing the regulatory framework for internal control. Chapter 3.3 summarizes the literature review and highlights the most relevant findings to this thesis.

### **3.1 Internal control assessment**

#### **3.1.1 Assessing the effectiveness of internal control system**

Ahokas (2012) has classified the assessment of the internal control efficiency according to the party responsible for executing the assessment. When the external and internal auditors execute assessments on the internal control system this is referred to as control testing. The purpose of the control testing is to give an objective assessment on the design of the company's control environment and to report and give recommendations if any control deficiencies have been identified. In other words, the control testing is conducted by an independent auditors whereas the organization may perform internal evaluations on the control system referred to as self-assessments. (Ahokas 2012, 76-77) These internal evaluations may be executed as peer-reviews, self-assessments or as an ongoing reporting of deviations. The nature of internally executed evaluations is less objective, but it can however be important source of information for answering to the audit findings and recommendations Often the internal and external auditors also use the company's internal documentation of the control evaluations as a source material for their conclusions. (Ahokas 2012, 78-83)

Ahokas points out that the internal control system, along with its development, should be monitored on a continuous basis and the ultimate responsibility for this lies on the top management. This includes the evaluation of the monitoring process. The formal documentation of the controls does not yet guarantee that the internal control system is actually working as designed. The personnel needs to understand the purpose of the controls in order to execute them in a meaningful way instead of mechanical execution. A one option for increasing the personnel's commitment to the internal control system is to link their bonuses to some of the targets set for the controls. Having said this, Ahokas reminds that the control environment and the organizational culture promoted by the management is yet the most effective way to influence on the personnel's commitment to the internal control system. (Ahokas 2012, 89-90)

From the auditors' perspective the monitoring of internal control system is a relevant part in receiving reasonable assurance that the company's control environment is operating efficiently. Ionescu (2011) refers to the International Organization of Supreme Audit Institutions (INTOSAI) Guidelines for Internal Control Standards for the Public Sector when making conclusions of the managers' role in monitoring the effectiveness of the internal control system with relation to the auditors' objectives. Managers' responsibility is to evaluate promptly the findings from the control assessments of an audit or internal monitoring and to determine proper actions in order to answer to these findings. Moreover, they need to oversee that these actions are completed within an established timeframe so that the control deficiencies are resolved. (Ionescu 2011) The INTOSAI also points out with different practical examples of how the lack of internal monitoring affects the compliance of the internal control procedures and delays the execution of any corrective actions, therefore deteriorating the internal control system. (INTOSAI 1998) Therefore, the effective and appropriate monitoring helps the auditors to give their opinion on the state of the company's control environment.

The effectiveness of monitoring activities may be enhanced by using technology based solution according to the results arising from the study of Masli et al. (2010). The study implicates that the use of technology in internal control monitoring is associated with lower level of material weaknesses and with smaller increases in audit fees. However, the benefits of the IT

implementations in monitoring internal controls have not yet fully been utilized because of the current maturity levels of these software tools. In the future these benefits may be more widely exploited but even now the efficient design of the technology based monitoring solutions does contribute to the assessment of the organization's control system effectiveness. (Masli et al. 2010)

The study does implicate that the argued benefits of monitoring are supported by empirical evidence and that the organizations do benefit from having formal monitoring procedures implemented into the control system. However, the authors point out that by the time of conducting their research there were no studies contributing to the empirical evidence documenting the benefits asserted by COSO. They note also that the research has concentrated on investigating the determinants and impacts on material control weaknesses but there seems to be a lack of evidence on what kind of strategies organizations adopt to monitoring of internal controls. (Masli et al. 2010)

Arwinge (2013) has examined the different aspects of the internal control and points out that it is often difficult for the management to make statements of the effectiveness of internal control system. The different classifications of the control deficiencies, like the categorization introduced by the PCAOB (2004) into control deficiency, significant deficiency and material weakness, is in practice difficult to grasp and therefore the statements on the overall effectiveness of the control systems seems rather abstract. However, the assessment of the internal control system is a burning topic for researchers since the management needs to make these evaluations and have the tools for understanding on how the internal control system is affected by different factors. One of the recent findings is that the control environment component of the COSO Framework seems to appear as the most significant when the different components have been evaluated but at the same time the effectiveness of this component seems to be the most difficult to assess. (Arwinge 2013, 115)

### **3.1.2 Assessing Internal Control Over Financial Reporting according to KPMG**

The document and guidance provided by the KPMG is contributing to the assessment of internal controls in the environment of United States federal government financial reporting (KPMG

2005, ii). The purpose of the guidance is to provide assistance for government agencies to comply with the regulations related to the internal controls presented by the different supervisory bodies in the US. These regulations are largely based on the recommendations given in the COSO Framework. In particular, the guidance is targeted to help the management of these agencies to assess the effectiveness of the internal controls. However, since the guidance draws from the experience arising from the implementation of internal controls in public companies, the recommendations can be applied even more widely. (KPMG 2005, 2)

The guidance is divided into five parts: (1) Plan and Scope the Evaluation, (2) Document Controls, (3) Evaluate Design and Operating Effectiveness, (4) Identify and Correct Deficiencies and (5) Report on Internal Control (KPMG 2005, 3). In the following, the relevant observations from the guidance to this study are presented, focusing on the parts 3, 4 and 5.

The first part, Plan and Scope the Evaluation, is related to the organizing of the assessment process of the internal controls required by the US regulations. It begins with recommendations related to the establishment of an effective organization and the positive environment for the assessment but elaborates it further by giving detailed instructions of identifying the relevant financial reports, materiality levels, financial statement assertions and transaction cycles for the assessment process. (KPMG 2005, 5)

The second part gives guidance on how to formally document the control environment. This should begin by documenting the transaction cycles in order to identify controls as well as the areas where errors or misstatements in the financial reporting might occur. The documentation of the transaction cycles is recommended to be composed as process narratives or flowcharts but the summary of the control environment should be presented in control matrixes. (KPMG 2005, 18) According to the guidance, the control matrixes should include the assertions and risks related to the line items and the controls that address these risks. The matrix should also include detailed information of the type, frequency, objectives and the significance of these controls. It should be easy to identify from the documentation if some key risk area is lacking controls or whether there are overlapping controls on less important risk areas. (KPMG 2005, 21)

KPMG gives an illustrative list of what kind of controls may be used in order to support the management assertions regarding the financial statements. These include management reviews of performance, human capital management, information processing controls, performance indicators, segregation of duties, accurate and timely recording of transactions, access controls and the internal control and transactions documentation. It is specified that the management reviews are not adequate controls by themselves, but need to be paired with other forms of control. (KPMG 2005, 26-27)

KPMG gives an example of the design of a control matrix in the appendices of the guidance and defines certain attributes that should be identified in the documentation. These attributes include the identification of the risks to be mitigated, the description of the key controls addressing the risks, the type of control in detail (for instance manual or automated, segregation of duties or reconciliation etc.), frequency and the significance of the control. With the significance it refers to whether the control is a key or non-key control. KPMG seems to be consistent with the COSO Monitoring Guidance in suggesting that only the key controls ought to be tested. (KPMG 2005, 50)

However, the testing of the Key Controls in KPMG's guidance is slightly different from what is meant by monitoring the Key Controls in the COSO Monitoring Guidance. The KPMG states that the Key Controls should be tested to determine whether the controls are operating effectively and are still supporting the management assertions made upon them. The testing of the Key Controls is done by performing the transactions or controls and determining whether they are performing as designed and expected. (KPMG 2005, 38) The testing is the central part of the third step in the guidance, Evaluate Design and Operating Effectiveness. This includes the analysis of the effectiveness of the control in order to determine whether the control is able to prevent material misstatements in the company's financial statements. (KPMG 2005, 34) So, in a sense, the KPMG guidance goes deeper into the effectiveness of the control design in its testing recommendation than what the COSO suggests that the monitoring component should reveal. For COSO, the control design analysis is part of the Control Activities component, where the appropriate controls are planned and implemented, whereas with KPMG this is integrated into

the testing phase. This is due to the different approach these documents have on the internal control design: COSO is helping the organizations to adopt adequate measures to secure reliable financial reporting whereas KPMG is an external party assessing the effectiveness of internal controls in different organizations.

As part of the assessment of the control design, KPMG also gives attention to the information and communication process and suggests that it is important to evaluate whether the information related to financial reporting is communicated to relevant personnel in timely and reliable manner (KPMG 2005, 30). Furthermore, the evaluation of the effectiveness of monitoring activities includes the same kind of assessment concerning the reporting process for control deficiencies (KPMG 2005, 32). However, the attributes of relevancy or reliability are not specified in this context any further.

### **3.1.3 Measuring the monitoring effectiveness**

An example process for defining the metrics in service oriented industry is given by Jääskeläinen et al. (2013). They present the process model as a checklist to ensure that the most important aspects for identifying the proper metrics for monitoring the effectiveness of service production is taken into account. The process model consists of 5 steps where the first three are related to the planning process and the last two to the implementation of the metrics. The planning begins with designing the project and defining the objectives for the process. (Jääskeläinen et al. 2013, 25) The second step is to choose the items that need to be measured and this should be carried out in a workshop with the team responsible for the performance (Jääskeläinen et al. 2013, 28).

In the third step, the metrics are defined in detail. According to Jääskeläinen et al. the process requires several workshops in the metrics definition phase, including separate workshops for brainstorming the metrics, choosing the metrics and defining the attributes of the metrics. When the set of metrics is being defined they should be contemplated as a whole to determine whether they really give an appropriate perspective to the performance. They also emphasize that the presentation of the results should be thought through carefully and designed in a way that gives an overall impression of the results at a one glimpse. (Jääskeläinen et al. 2013, 31-33)

Jääskeläinen et al. also give an extensive list of attributes that should be considered when defining the metrics. They elaborate on the Neely et al. typology of the principles for using measures developed in 2002. Jääskeläinen et al. argue that for each of the metrics there should be defined appropriate principles of employment. These principles are presented as a list of definitions given for each of the metrics. These include an illustrative topic, purpose of the metric, the objectives related to the measurement, formula for calculating the metric, the frequency of measurement, person responsible for contributing the data, data source and the corrective actions if the targets for the measure are not achieved. This list is not inclusive but it gives a good illustration of what kind of aspects need to be considered when the performance measurement is designed. (Jääskeläinen et al. 2013, 65)

## **3.2 Context for internal controls and some research topics**

### **3.2.1 Management control systems in general**

When we are discussing internal controls or more specifically internal control over financial reporting it should be clear in mind that the phenomenon is only a one viewpoint to a broader concept of management control. The management control systems are foremost addressing questions related to employee behavior. Are the employees behaving as expected, and if not, what are the reasons behind it? Could the management do something in order to guide the personnel towards the desired behavior, and what that could be? (Merchant & Van Der Stede 2007, 7) Largely these same questions are addressed within the internal controls systems. The reasons why the management control systems are needed are related to the risk of unintentional human error or lack of competence, or to the risk of intentional fraudulent actions by the employees. (Merchant & Van Der Stede 2007, 8)

Management uses several different tools to control these matters and these are often interlocked with each other. Malmi and Brown (2008) argue that the management control systems should be studied as a package in order to understand the relations and the contingencies of the different systems by which the management is directing employee behavior. They identify five different types of controls that are commonly used by organizations and the employment of these controls

together forms a management control system package; the different types of controls may be developed independently and without any intentional coordination but yet they work together and have implications to each other.

The control types identified by Malmi and Brown are the cultural controls, planning, cybernetic controls, reward and compensation, and administrative controls. The cultural controls form the contextual framework for other controls to work in and therefore the culture of the organization is often considered as a given factor instead of a managerial tool. However, the management can for example promote certain values within the organization in order to direct the behavior of the employees and in this respect the culture can be seen as a tool for management control.

By planning the operations the management may set the goals and establish the standards for the organization in order to direct the behavior. This way it can also orchestrate the different functions and coordinate the operation towards the wanted direction. The cybernetic controls are the ones enabling the quantification of the system, including budgets, financial and non-financial measures as well as hybrid controls. The benefits of the cybernetic controls are the ability set targets and validate the performance against these targets and to perform a variance analyses of the performance. Reward and compensation controls are often linked to the planning and cybernetic controls but they are also seen as a distinct type of control in the Malmi and Brown presentation. Different studies show that the reward and compensation schemes also work as an efficient tool for management to direct the employee behavior in terms of direction, duration and intensity of their efforts.

The administrative controls are understood as the bureaucratic procedures and policies set for the behavior within the organization but also the organizational structure and the lines of accountability built into the organization are considered as a part the administrative controls. They form the structure in which the planning, cybernetic and reward and compensation controls to operate.

The key message of Malmi and Brown is that the design and configuration of the management control system package needs to be taken into account when the control systems are examined.

This includes the effectiveness of the control package as a whole as well as its different components in certain environments. Moreover, the contingencies between the different control systems within the package should be acknowledged in order to make sophisticated evaluations and implications of the functioning of the organizations management control system. According to Malmi and Brown, these aspects need to be considered also when conducting case researches and developing theories on how to support organization in their control design for better performance.

### **3.2.2 Interaction between the components of internal control**

The academic literature focusing on the use of the COSO Framework has concentrated on the appearance of control deficiencies or material weaknesses in the control system in different settings. These findings are shortly summoned in the following.

Agbejule & Jokipii (2009) have studied the interaction of different components of the internal controls, the Control Activities and the Monitoring Activities in particular, and how they perform in different kind of strategic contexts. They have focused their study on the effectiveness of internal control activities and monitoring as well as on how they should be balanced in different business environments. In their article Agbejule & Jokipii (2009) use the Miles & Snow (1978) typology for categorizing the companies according to their strategy into four groups: prospectors, defenders, analyzers and reactors. They combine this categorization with the different levels of control activities and monitoring present in the companies and then analyzing the effectiveness of the control system. The implications of this study lay in identifying the characteristics of a specific company in terms of the Miles & Snow typology and comparing the level of monitoring to the recommendations of Agbejule & Jokipii.

Klamm & Watson (2009) have studied the reasons for material weaknesses of internal controls reported under the SOX operating companies. The SOX requires companies to identify and report the material weaknesses, which are defined as such deficiencies which may lead to a reasonable possibility that a material misstatement concerning the firm's financial statements will not be prevented or detected on a timely basis. The purpose of their study is to analyze how

the material weaknesses are related to use of information technology and to the different components of the COSO Framework. They specify the material weaknesses according to whether they are IT-related or non-IT-related and to what extent they are present in relation to the different components of the COSO Framework. They find that the weak components of the framework are highly interrelated, which implies to us that the preliminary work done at the a company around the control environment and the other components of the COSO framework should be evaluated, since they have a strong effect on how effective the monitoring activities will be. Furthermore they find that firms with IT-related weak components have higher degree of material weaknesses. Therefore the strong, IT utilizing control environment and monitoring activities enhance the effectiveness of the internal control system in general.

Earlier also Doyle, Ge & McVay (2007) have studied the determinants of weaknesses in internal controls for companies reporting under SOX 404. They focus on wider characteristics that seem to contribute to material weaknesses in financial reporting and thus indicate possible deficiencies in internal controls and find that those companies that report material weaknesses tend to be smaller, younger, financially weaker and more complex, just to name a few. They also find that larger and well-established companies tend to have weaknesses concerning account-specific reporting in contrast to company-level weaknesses.

Hermanson, Smith & Stephens (2012) have committed a survey on 500 Chief Audit Executives' and other internal auditors' opinions on the level of the perceived strength of the internal controls of their organization. They find that the monitoring component of the COSO Framework is particularly dependent on the industry the company is operating so that in financial and banking sector the controls are more robust than in other services. They also find that the Tone-at-the-Top, which is related to the Control Environment component of the COSO Framework, as well as the management overriding the controls and deviations from the company policy are most commonly perceived as the weakest elements in internal controls.

Hunton, Mauldin & Wheeler (2008) have examined the effects of continuous monitoring activities on management decision making in terms of functional or dysfunctional behavior. In the COSO Framework the monitoring activities are divided into two categories: continuous (or

ongoing) and periodic monitoring, and the tendency is to favor the continuous activities since they are more inexpensive and more effortless in the long run once they have been implemented into the systems. Hunton, Mauldin & Wheeler (2008) find, on the other hand, that the continuous monitoring does decrease the earnings management behavior in presence on short-term incentives, but, on the other hand, continuous monitoring reduces the willingness for going into deals with higher risk levels even in the context of investments with high probability of positive yield.

### **3.2.3 Regulatory framework**

In terms of the regulations concerning the internal controls there has been recent development also in Finland for more detailed and rigorous guidance presented by the government and other authorities. As a legislative requirement, the Securities Market Act chapter 7 section 7 regulates that the publicly traded companies need to disclose a Corporate Governance statement, together with the management report or as a separate statement, by the side of the yearly financial reporting. The *Ministry of Finance's Decree on the Regular Duty of Disclosure of an Issuer of a Security* from 2012 further adds to this in section 7 that an issuer of securities needs to describe the internal controls and the risk management systems in this Corporate Governance statement.

The *Finnish Corporate Governance code 2010* gives more detailed recommendations on what should be included in the Corporate Governance report. The recommendation 54 in the Finnish Corporate Governance Code repeats the regulatory requirement that the company needs to disclose the “description of the main features of the internal control and risk management systems in relation to the financial reporting process”. The purpose of this recommendation is to ensure that the financial reports give essentially correct information about the company finances.

### **3.3 Summary of the theoretical background**

In the following the key points arising from the literature are summarized and the focus is given to the aspects that are considered most relevant when building the construction in the case assignment.

From the literature referred in the previous chapters, we find that the COSO intended the monitoring activities to be implemented by using the existing control procedures. (COSO 2008, 2) The cost-efficiency behind this kind of implementation is clearly understandable even by common knowledge. There is no need to find resources for some additional monitoring procedures if the existing control activities are utilized to gather the information for monitoring purposes as well. Therefore, when the monitoring activities in the Monit Inc. are being formalized, these recommendations from COSO need to be taken into account and we need to find ways to monitor and measure the performance of internal controls without adding any external pressure to the operative staff. However, there might become a need to formalize some information gathering procedures that have not been implemented prior to the project, but even these should be designed so that they genuinely benefit the organization and give added value to users of the information.

Another general observation from the COSO guidance is that the monitoring should be designed to bring forth information concerning the changes in the business environment or in the internal operations of the organization (COSO 2008, 14, 15). The core behind this idea is that the monitoring procedures should reveal if the controls they are monitoring become ineffective. In practice, this probably needs professional judgment and in-built periodical assessment within the reporting process to discover whether the information provided by the monitoring activities reflects the surrounding circumstances perceived by the operative staff. This is also related to the control baseline assessment. (COSO 2008, 15) While the control baseline is evaluated first when the COSO Framework is initially applied in the organization, there should be continuous evaluation of the circumstances and assessments made whether the internal controls should be redesigned to meet the changing requirements.

Furthermore, COSO suggests that the monitoring activities should be designed from the risk offset. (COSO 2008, 18-20) The cost-efficiency is again the main motivator behind this method. There is no reason monitor all processes or activities while some of them are considered reliable from the financial reporting point of view. To do so would lead to information overflow instead of providing relevant and meaningful information to be used by the management to lead the organization. Therefore, the prioritization of the processes and controls within the organization according to their risk evaluation is one of the key elements in designing effective monitoring procedures. This way the monitoring activities are more likely to reveal information of the internal control system that is affecting the management's decision-making and judgment on the control environment. COSO also points out that the risk evaluation should be done disregarding the current control activities. (COSO 2008, 20)

The risk evaluation also helps to find the Key Controls, controls that are the most likely to fail in the current system. (COSO 2008, 22) Although the COSO did recommend to evaluate the processes disregarding the current controls it might be worth considering to make the evaluations having the current situation in mind. This way these key controls may be discovered with the same procedure. However, the Key Controls are also those controls that are designed to prevent or detect multiple control failures at the same time and monitoring these would give wider information on the effectiveness of the control system.

The KPMG provided with the practical illustrations on how to document the control environment and how to conduct the control testing. (KPMG 2005, 50, 38) The KPMG, although being a commercial publisher, has to comply with the International Standards on Auditing (ISA) set by the International Auditing and Assurance Standards Board (IAASB) in how to validate the internal control environment. Therefore the recommendation it gives to the organizations regarding the internal control design can be regarded as reliable and relevant, at least in setting the direction on how the monitoring activities ought to be documented. Jääskeläinen et al. (2013) provided with even more practical guidance on how the process of defining the metrics for service oriented organizations should be conducted in a set of workshops.

Masli et al. (2010) pointed out that there was not a lot of evidence available on how the organizations had adopted the monitoring of internal controls. This is consistent with the observations done during this study. The most relevant literature concerning the research problem of implementing the monitoring activities component of the COSO Framework is provided by COSO and other non-academic sources. The academic discussion on internal controls has concentrated on the reasons behind the control deficiencies (Klamm & Watson 2009, Doyle, Ge & McVay 2007) and the interaction between the different components of the COSO Framework (Agbejule & Jokipii 2009).

The monitoring and internal controls in general need to be examined in the broader concept of management control and the regulations set by different legislators. The internal control is part of a set of tools by which the management steers the organization. The formal monitoring procedures are accompanied and complemented, for example, by the cultural or administrative controls and these different aspects need to be considered together. (Malmi & Brown 2008) The monitoring of internal controls is also part of the legislative requirement imposed to the publicly traded companies of disclosing the internal controls and the risk management systems.

## **4 CASE RESEARCH DESIGN**

### **4.1 Purpose of the case assignment**

The purpose of the case assignment is to construct and analyze a method for implementing the monitoring activities component of the COSO Framework. The case assignment will focus on the ongoing monitoring aspect of the COSO Framework and in particular on the identification of the key items in the internal control system. The aim here is to be able to report the effectiveness of the internal controls to senior management or to other stakeholders using some illustrative metrics, or key control indicators. The case company was compelled to start this work as it was also recommended in the previous year's internal audit report.

The primary goal is to create a set of tools, or a method, for the case company to further develop the monitoring the internal control system and to find the key items within the financial reporting process for which the monitoring should be implemented. This is done by developing an initial pallet of metrics as a suggestion of what kind of metrics could be implemented for monitoring purposes. These metrics will be presented in the form of Key Control Indicators. The literature review and theoretical construction forms the basis for the case assignment. Furthermore, the case assignment consists of a recommendation for the reporting process for the KCI results.

### **4.2 Research methodology**

The methodology used in this study is the constructive research approach. The purpose of the constructive research approach is to develop a usable solution to a real-world problem with clear theoretical connections and the potentiality of the solutions more general application is examined. (Kasanen et al. 1993) The design of the study follows largely the presentation of Labro & Tuomela (2003). They have described that the structure of the constructive research approach is divided into three phases: (1) preparatory phase, (2) fieldwork phase and (3) theorizing phase.

According to the categorization of Labro & Tuomela (2003), in the first phase a practically relevant and theoretically interesting research problem is identified. This study is conducted in

order to examine how the monitoring component of the COSO Framework should be applied in a Finnish based publicly traded company. The practical relevance of the research problem arises from the fact that designing the monitoring of the internal controls is an actual need addressed by the case company, and there is guidance rather scarcely available on how the process should be done and what kind of metrics should be implemented and how these metrics should be selected.

The case company has also a choice to modify the monitoring activities according to their own needs, since there is no legal binding to have certain amount and type of monitoring done in order to fulfil the regulatory requirements, like the SOX 404 for example. However, Monit Inc. is listed in NASDAQ OMX Helsinki, which means that the Finnish regulations oblige it to report the level of internal controls as a part of the Annual Report or in the separate Corporate Governance Statement. Therefore, it is a fruitful environment to test how the monitoring would be best constructed in such circumstances.

The theoretical interest of the research problem arises from the lack of studies concerning the monitoring of the internal controls. There are several studies which concentrate on the interdependence of the different aspects of the COSO Framework, as well as studies which address the implications of monitoring the internal controls on other managerial issues. However, the process of implementing the monitoring component has not received interest in academic literature and there are no master's theses written on the topic either.

The second, fieldwork phase was done during the period of March to August 2014, while working as a part of the COFR process at Monit Inc. According to Labro & Tuomela, this phase should contain obtaining a profound understanding of the topic, creating a novel construct as well as implementing and testing the construct. (Labro & Tuomela 2003) The author was able to spend several months as a part of the organization and she was working in a close co-operation with the ICM, who was responsible for coordinating the internal controls of the whole group. While working at Monit Inc. a profound understanding of the current situation of the company's COFR was developed by familiarizing with all the existing internal documentation provided by Monit Inc. Furthermore, all the current practices around monitoring and KPI metrics or similar were surveyed in order to identify possible synergies with the existing practices or the practices

under development. Part of the knowledge building were also all the discussion and interviews done with the key personnel responsible for different aspects relevant to financial reporting.

The third phase, which according to Labro & Tuomela's model should contain examining the scope of the solutions' applicability as well as showing the theoretical connections and the research contribution of the solution, is done in the analysis section of this thesis. The applicability of the construction was tested already while working within the case organization as it was largely built into the construction process. This was done by getting approvals from senior management for different steps in the construction process. This case study does not however fully meet the criteria of the constructive method, since the timeframe does not allow to evaluate the practical implementation of the results arising from this study and to analyze the functionality and applicability of the solution.

### **4.3 Design of case execution**

The plan was to proceed in three stages in order to build the monitoring on the existing COFR documentation and controls. In the first stage the plan was to get familiar with the existing documentation, the structure of the COFR and to finally fix the scope for the assignment. The key managers in charge of the COFR were scheduled to be met during the late April in order to present the plan for the assignment and to fix the scope. The managers included the vice president of the Group Accounting and Services, the Head of Financial Services unit and the Head of Corporate Accounting. During the first stage of the assignment the selection of the key processes was made, as well as the selection of the legal units, which were to be in the scope of this assignment. The selection was made by evaluating the importance of the processes and the legal units in terms of the financial impact they have at group level. Also the nature and the importance of the unit or process for the financial reporting activities was taken into consideration while making the decisions of what to include into the case assignment.

The documentation available for the assignment consisted of the principle document for Control Over Financial Reporting and more detailed Instruction for Control Over Financial Reporting document. In addition, the control excels in the company's intranet, which contained the detailed

descriptions of the control requirements, risks related to the control requirements, controls addressed to those and other more detailed descriptions related to these items, were also explored. Furthermore, the different monitoring initiatives and procedures already in action within the company were explored, including the Key Performance Indicators defined for the operations, the process reports for Financial Services, the Deviations report for supply, inventory and sales processes, as well as the Compliance Monitor for monitoring and reporting the effectiveness of the financial transaction process with derivatives. During the assignment, additional material was also scrutinized for building up the overall picture of the arising issues.

The second phase consisted of a series of workshops arranged to survey the KCRs for each of the selected processes. The outcome from these first workshops was expected to be a risk assessment for all the related KCRs in order to find out the most important ones for which the monitoring would be implemented. The risk assessment was made by using the recommendations of the COSO Framework presented in the chapter 2.2.2 Risk Assessment. The COFR documentation incorporated a definition of the risk for each of the KCRs, so the purpose of these workshops was to define the level of risk by assessing the possible impact and the probability of the risk realization. There were four workshops designed to address this issue, one for each selected process. Workshops were prepared by having Power Point templates with information requirements built into them, which would then make it easier to have all the required data gathered and processed during the workshops. From two to four key persons responsible for the the particular process were invited to each of these workshops and the workshops were also recorded.

The third phase of the assignment consisted of the second set of workshops with the same people that attended the first workshops. The purpose of the second workshop was, first, to evaluate the results from the previous workshops in order to see if the risk assessment resulted in KCRs, which seemed reasonable as the most important ones for monitoring. The second step in the this set of workshops was to identify the KCs that were most effective in addressing the risks associated with the KCRs. This was done by giving illustrations of the controls that were

described in the COFR documentation and to identifying the ones that captured the most important aspects in the internal control process.

The identification of the KCs was done by using the evaluation methods presented in the COSO Guidance on Monitoring Internal Controls document (see chapter 2.3). The KCs should be the ones that provide the best support on the reliability of the internal control system. Therefore the controls which addressed more than one aspect or KCR from the process were taken into account and also the focus was put on the manual controls, according the recommendations arising from the COSO Guidance on Monitoring -document. The automated and system integrated controls were therefore left out of the scope since they were considered to be managed and monitored by the system owners. Also the previous control failures were acknowledged when identifying the KCs – the areas and the controls that had problems in the past were highlighted and pointed out as the KC.

The constituting and defining of the KCIs was planned to be done also during the second set of workshops but, in practice, this was done separately after the workshops. Based on the information gathered from the second workshops a proposition of the KCIs for the identified KCs were done. This was done by using the sources presented in the chapter 3 as a guide for creating a sound model for defining the KCIs. These sources included the KPMG (2005) examples from *Assessing the Internal Control over Financial Reporting*, as well as the application principles as presented by Jääskeläinen et al. (2013). Furthermore, the KCIs were developed by elaborating on the recommendations given by Xactium (2013).

The suggestions of the KCIs were sent for comments and further specifications by e-mail again to the same people that attended the workshops. The attendees were asked to comment on the overall applicability of the metrics as well as to define the appropriate target levels for the metrics. The purpose was to have certain thresholds identified in order to report the effectiveness of the control in terms of traffic lights – green, amber, red – to give more visual information on the performance of the different controls. The thresholds were defined by the responsible persons for each of the processes in order to have an appropriate assessment of the rating scale and acceptable levels of performance. This also contributed to the acceptance of the metrics, since

the process owners could themselves influence on what kind of indicators were created to measure the performance of the process.

Since the COFR Instruction document suggested that the KCIs can also be process indicators, it was considered appropriate to include certain metrics into the palette of the KCIs to illustrate the overall performance of the processes. The Financial Services unit had already this kind of process report available, where all the units and process teams reported their outlook on how well the monthly closing was performed in the previous cut-off. There were additionally a meeting arranged with the people responsible for the transactions with the derivatives in order to find out whether similar kind of metrics could be established for this process as well. Furthermore, the directors of the Planning and Control function were also met in order to have their point of view for the financial reporting process although this was not directly a part of the defined scope of the assignment. The reason for this was to have a broader insight into the whole reporting process and also take into account the implications which the financial reporting has for the forecasting and business control.

After all the workshops and the interview were carried out and the results analyzed, an incorporated report, which contained the KCIs for each of the processes in the scope of the assignment as well as the additional process indicators, was composed. This final report contained also the description of the process of how the KCIs were derived, together with all the material from the workshops. The same managers that accepted the scope of the assignment, with the exception of the Head of Corporate Accounting who was not present in the final meeting, i.e. vice president of the Group Accounting and Services, the Head of Financial Services unit, as well as the ICM, also gave the final acceptance to the case assignment.

## **5 CASE RESEARCH AT MONIT INC.**

### **5.1 Background and context**

During 2009 Control Over Financial Reporting (COFR) project was initiated at Monit Inc. in order to fulfil the renewed requirements for internal controls set by the Securities Market Act (SMA) and other regulations for Finnish listed companies. During the project the control environment, risk assessment and control activities, as well as the information and communication of the ongoing process was established and this process was "broadly based" on the guidelines of the COSO Framework, as stated in Monit Inc.'s internal documentation on principles for COFR.

After the basic requirements for internal controls were defined the focus shifted towards more specific and urgent control matters concerning the correct recording of the supply and sales transactions and the inventory accounting in particular. Therefore, the monitoring activities component of the COSO Framework was laid aside for later development.

However, several independent monitoring initiatives were launched within the organization to support and to give more credibility to the control activities. For example, in the Financial Services unit, which serves as a central accounting and financial control center for group companies, monitoring of the internal processes was developed for internal purposes and the similar initiatives were developed in some other units as well. Nevertheless, the monitoring was not integrated into the COFR documentation and there was no systematic follow-up or guidance on what and how to monitor. Many of the control activities that were monitored had also been developed independently and the focus had not necessarily been of the Financial Controls. In the mean while the internal auditors have audited the COFR process for two times. In the context of the COSO Framework internal audit can be categorized as a one form of periodical monitoring, so, in that sense there has been monitoring on the internal controls even though the Monitoring component in itself has yet not been formally defined.

The internal audit function of the case company has stated in the beginning of 2014 that establishing the Monitoring Activities of the COFR is the priority in terms of the matters concerning internal controls. In addition, the AC, according to their responsibilities, needs to follow-up the performance financial reporting process and they have expressed the interest on the overall assessment of the internal control system. More precisely, the AC expressed this need by asking the internal auditor and the business controller of how well the controls are performing at scale from one to ten. Therefore, the development of Key Control Indicators was considered as a solution for both of these requirements.

The motivation for establishing the monitoring of the internal controls also arises from other aspects than merely from the request from the internal audit and the AC. The company is due to tighten its reporting schedule in the near future in order to give more time for the planning and control unit to analyze the result. This means that the financial reporting process needs to be streamlined so that there will no longer remain time for looking up the causes for discrepancies and fixing errors after the reporting deadline.

The organization has also become more internationally operating during the past years due new business areas and global financial information systems. This has brought out new challenges in terms of unified processes and common way of working. The distance between units is both spatial as well as temporal, since the business operations is lead at the same time from Asia and the North America in addition to Europe. The different time zones and cultures make the management of the processes more challenging. These differences have caused that there have appeared some discrepancies in the application of the same systems and functions and therefore, the process has not been entirely consistent.

To answer to this information requirement of the AC and to complete the COFR documentation in terms of the monitoring activities component of the COSO framework in order to help the organization to manage the internal controls, the IMC initiated the development of the monitoring of the COFR. The commissioning of this thesis was an integral part of the initiative and, in practice, it means that the basis for ongoing monitoring of the internal control activities should be established by the assignment. The purpose of the commission is to identify the

method for defining Key Control Indicators (KCI) as well as the process for communicating the information provided by these indicators to all the relevant parties, including the management and the AC when needed.

## **5.2 Initial COFR maturity**

Within the COFR project Monit Inc. has developed documentation concerning the current situation of internal controls and control requirements, which should be met in order to fulfil the regulations set for internal controls. The documentations consists of a principle document for Control Over Financial Reporting and more detailed Instruction for Control Over Financial Reporting document.

The objective of these documents is "to set the standard of internal control applicable to all entities and units in Monit Inc. from the point of view of reliable financial reporting." (Monit Inc. 2009) The former principle document describes the responsibilities within Monit Inc. for the different aspects of internal controls and develops the system for Control Over Financial Reporting. This section of the document follows the outline of the COSO Framework as describing its different components. The later, Instructions document, elaborates the principle document by defining the different processes and sub-processes for internal controls and sets different Key Control Requirements (KCRs) for each of these processes.

Monit Inc. has taken the different business processes as the basis for developing the internal controls framework and in the process it has identified 9 key processes for which the control activities should be developed. The 9 key processes are the following: (1) Sales, other income and receivables, (2) Procurement, inventory management and payables, (3) Capital expenditure, (4) Personnel related expenditure, (5) Financing and treasury transactions, (6) Transactions with financial instruments, (7) Taxation, (8) Non-routine transactions and (9) Reporting and Consolidation.

Further for each of these key processes a specific amount of sub-processes have been identified. For example, for the first key process "Sales, other income and receivables" there are 8 sub-

processes: (1) Customer acceptance and sales contract, (2) Acquiring and accepting orders for delivering products or services to accepted customers, (3) Delivery of products or services to customers, (3) Invoicing deliveries of products or services, (4) Recording sales transactions, (5) Collection procedures, (6) Valuation of receivables, (7) Receipt and recognition of cash payments and (8) Applying and accounting for government grants and subsidies.

Again for each of these sub-processes the company has identified specific KCRs. Examples of these requirements are the following:

KCR for sub-process 1: There are adequate measures to check customer creditworthiness and to approve new customers. There are defined and documented authorization limits for approving customers and making offers. Collateral is requested when needed.

KCR for sub-process 3: All that is delivered is also invoiced. Deliveries that have not been invoiced are monitored.

KCR for sub-process 4: All sales and billing transactions are recorded in accounting records completely, correctly and timely and are only processed by authorized users.

The overall structure of the COFR framework within the case company is summarized in the following table.

Table 2 The structure of COFR in the case company

<b>Key Processes</b>	9 Key Processes
<b>Sub-processes</b>	Different amount of sub processes for each of the Key Processes
<b>Key Control Requirements (KCRs)</b>	170 KCRs altogether, assigned to specific sub-process
<b>Key Controls (KCs)</b>	Identified by units in order to fulfil the KCRs From 1 to 5 for each KCR
<b>Key Control Indicators (KCI)</b>	To be identified

### **5.3 Scope for the case assignment**

The purpose of the assignment was to develop the systematic monitoring and reporting it by utilizing the existing material and existing data from the different processes. Since the entire COFR documentation covered practically the whole corporation it was found appropriate to focus on the most important processes considering the time constraints and the scope of the master's thesis assignment.

One possibility, which was also scrutinized with respect to the scope of the initial systematic monitoring was that should the focus be put on one single process area instead of selecting the most important ones. The benefits in this approach would have been that the company would have received in depth information on one process area and for the researcher this would have given a chance to familiarize profoundly on one exclusive area within the company. This possibility was introduced by and discussed with the vice president of the Group Accounting and Services as well as with the Head of Financial Services unit.

However, the decision was made to select the most important process areas for monitoring for the following reasons. The most important aspect of the assignment was to develop a method for identifying the Key Control Indicators in order to further develop the monitoring at Monit Inc. and to present a model, which could be multiplied in different levels later on. Another aspect, which was considered focal at this stage, was the requirements given by the internal auditing and AC. There was a need for an overall assessment of the state of controls at Monit Inc. and if this assignment would have focused only on a one process area this overall evaluation would not have been achieved. It was acknowledged that this approach might lead to results, which could be considered as rather superficial, but on the other hand, the benefits were eventually considered to outweigh the disadvantages. The most important argument for the selected approach was however the fact that this way the company will acquire itself the most beneficial information on how the monitoring should be developed and executed in different contexts in the future. At the same time an initial sweep over the most important processes could already be done monitoring wise.

At Monit Inc. there are approximately 30 legal units, with a significant amount of units located around Europe, Asia and North America. As the setting up of monitoring acquires resources, the plan was to proceed in phases, so that the workload does not build up overwhelmingly. This way there is also a possibility to change the process later on if needed. Therefore, only the most important units were scoped for the initial phase of implementing the monitoring.

According to the internal control manager (ICM) at Monit Inc. the internal controls are reviewed from several units per year during the following years. This process was already started in 2013 when three units, including the parent company, reported their updated internal controls for sales and procurement processes to ICM. During 2014, there will be some more units to update their control documentation and they have been requested to document the existing controls and to select from 3 to 6 most important controls per process. Furthermore, these units have been requested to propose possible key control indicators with target levels. Although the units themselves should give suggestions of KCIs, ICM and his supervisor will evaluate them before application. According to ICM it was probable already at the beginning of the assignment that the units will need support when trying to identify the possible metrics for KCIs and therefore no ready answers from that direction were expected.

The scope was set to contain processes for monitoring from these units, which reported their internal controls in 2013 or are going to report during 2014. The reasoning for this was, first of all, practical. There is data available and the key personnel has recently worked on the control issues, so the problem-field is already fairly familiar. That is why the process for identifying the KCIs would be expected to be somewhat easier. Second, these units have already been selected for the first reporting phase on the grounds of their importance to the group as a whole. Therefore, it was logical to select the processes, KCRs and KCs as the overall target of the assignment and to identify the most important controls affecting the reliability of financial reporting for monitoring from these units in this pilot phase.

## **5.4 Case results**

### **5.4.1 Preparing for the assignment**

The first task in the assignment was to explore the current material related to the internal controls over financial reporting available at the case company. The work that was done during the initial takeoff in the COFR process had resulted quite detailed documentation on what is meant by COFR at Monit Inc. and this included also some definitions of what monitoring means in this context. The key determinants, which were taken into account from the COFR principle and instructions documents, were related to the structure and context of the metrics, which would be developed during the assignment. These documents and especially the chapters describing the monitoring and KCIs were written slightly upfront, so that some of the detailed instructions given in them were not actually implemented yet. Therefore we had the chance to read them through critically and to evaluate whether it all was actually applicable at this stage of the COFR.

Some aspects from the COFR instructions were especially relevant for the case assignment in order to make rational choices of what to monitor and what to select for KCIs. These choices were also largely supported by the literature. One of the instructions given was that the monitoring should be done in the course of the regular management activities. This is in line with the COSO instructions that the control activities, as well as their monitoring, should be built into the control system rather than built upon it. (COSO 1994, 51-52) Therefore the decision and explicit statement was made that the assignment would utilize the existing controls, reconciliations and such as much as possible. Only in well-reasoned occasions, new control procedures and monitoring would be recommended.

Also the instruction advises the units to find KCIs only for the most relevant processes considering the risks and financial statement impacts. One of the guiding principles throughout the process of finding the KCIs was to focus on the most important processes, KCRs and KCs in order to find the most relevant indicators for this specific environment. The COFR documentation was rather extensive and it was recognized that the scoping needed to be clear in order to the assignment to be manageable.

As it was described in the previous chapter, the scoping of the assignment included selecting the most important processes into the scope for further processing. It was considered self-evident that the Reporting and Consolidation process would be included, since the focus was to monitor the controls over *financial reporting*. Then again, as the thought was to focus on the most important processes affecting the financial reporting it was noted that the Sales, other income and receivables and the Procurement, inventory management and payables were the ones were the core business of the company actually happened and therefore they deserved to be included. However, these two processes could in practice be covered together, since due the nature of the business they are managed in conjunction with each other.

There was some discussion on whether to take the Capital expenditure or the Transactions with financial instruments as the fourth process into the scope of the assignment. The Capital expenditure was supported by the fact that the company had large investments in its balance sheet (up to 3,7 billion euros in 2013) and therefore the financial statement impact of this process was significant. However, the process itself was considered less turbulent and therefore the need for monitoring the Capital expenditure process was not that urgent. Transactions with financial instruments was an integral part of the managing the everyday business at the case company and the decision-making related to it was more swift and risky. Then again, the actual impacts on the financial statement were not that significant, but the importance of this process was elevated by the fact that the process was known to be difficult to manage. Therefore the decision was made to include the Transactions with the financial instruments as the fourth process into the assignment. This process is later in this thesis also referred to as the Derivatives process.

In the following table presents all the key processes identified in the COFR and the processes selected for the scope of this assignment are highlighted.

Table 3 Key processes with the ones scoped into the assignment

<b>Sales, other income and receivables</b>	<b>Procurement, inventory management and payables</b>	Capital expenditure
Personnel related expenditure	Financing and treasury transactions	<b>Transactions with financial instruments</b>
Taxation	Non-routine transactions	<b>Reporting and Consolidation</b>

The remaining processes were considered non-relevant at this point, since they were support functions to the core transactions and processes. Monitoring will be implemented for these later on during the development of the COFR but for now they were excluded from the assignment.

#### 5.4.2 Selecting control requirements

After preparation next step was to decide the approach on what to monitor from these selected process areas. The COFR documentation was scrutinized carefully in order to understand the nature of the available information. In the early stage of the assignment it was already evident that there were several control requirements identified under COFR which didn't actually have a direct impact on the validity of the financial reporting. These control requirements are undoubtedly extremely important for the company's operations, but since the assignment was targeted to monitor the controls over financial reporting, these were decided to be left out of scope. The plan was to make a pre-selection of the control requirements into the ones directly related to the validity of financial reporting and to confirm the selection by the persons who are responsible for the day to day work with these requirements.

The Appendix A illustrates the KCR related to the Reporting and consolidation process with the ones which were assessed to have a direct influence on financial reporting being highlighted. The same assessment was done for all the KCRs identified in the COFR process, also for the ones which were not in the scope of the assignment, in order to help the future development of the

monitoring activities. However, only the ones related to the four processes within the scope were validated in the first set of workshops.

When the selection of the control requirements affecting the validity of financial reporting was made there were still substantial amount of requirements left while some of them were considered rather trivial. The need for further scoping was therefore acknowledged. Since the approach to focus on the most important processes instead of one particular was made this gave us the guidelines for selecting the most important control requirements according to their risk factor. If the validity of the financial reporting was to be verified it was consider logical to evaluate the different control requirements by how significant the risk related to not fulfilling the requirement would be. This approach would also contribute to making the most of this first sweep of monitoring at the case company. If the riskiest aspects affecting the validity of financial reporting could be identified and placed under monitoring this would benefit the development of the control environment at the case company.

#### **5.4.3 Using risk map in selecting control requirements**

The risk evaluation was planned to be carried out by utilizing the risk map where the risk level of on requirement was determined by evaluating the risk on two dimensions: the impact of the risk realization and the probability of the risk realization. These evaluations were to be made in different workshops with people responsible for the different process areas. After the first workshop the plan was to have the most important control requirements identified by mapping the requirements on the following matrix.

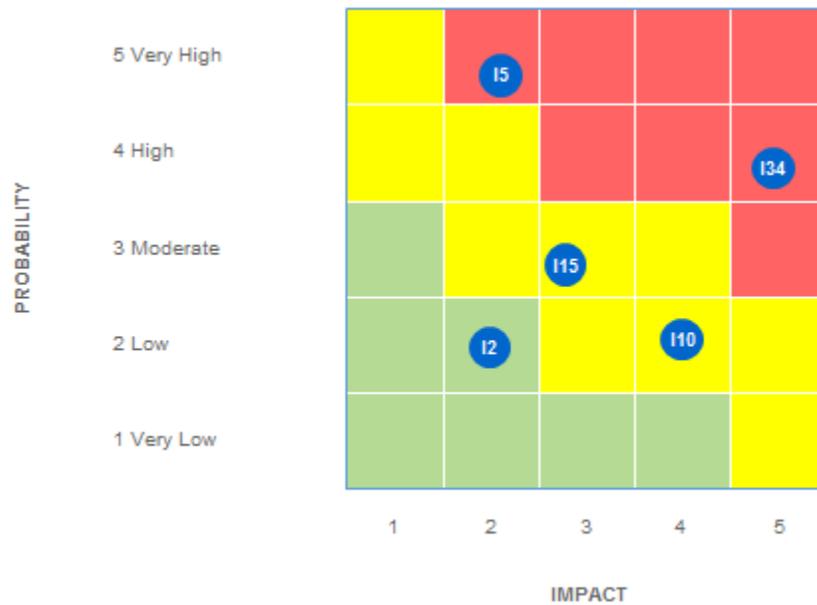


Figure 5 Risk matrix example

The evaluation would be made by using the scale from 1 to 5 where the 1 means very low impact or very low probability and 5 very high impact or very high probability. The ones which end up in the top right corner would be the ones where the monitoring is required and the bottom left corner could be left out due the lack of importance at this particular point in time.

The first set of workshops were designed around the risk assessment of the KCRs after validating the pre-selection of the KCRs according to their impact on financial reporting. In the company's intranet there was more detailed description of each of the KCRs with the related risks available and this was utilized when preparing the workshops. The following form was pre-filled for the workshops so that the participants needed only to assess the impact and the probability of the related risk. Some space was given also for additional comments, so the highlighted fields in the following picture needed input from the participants.

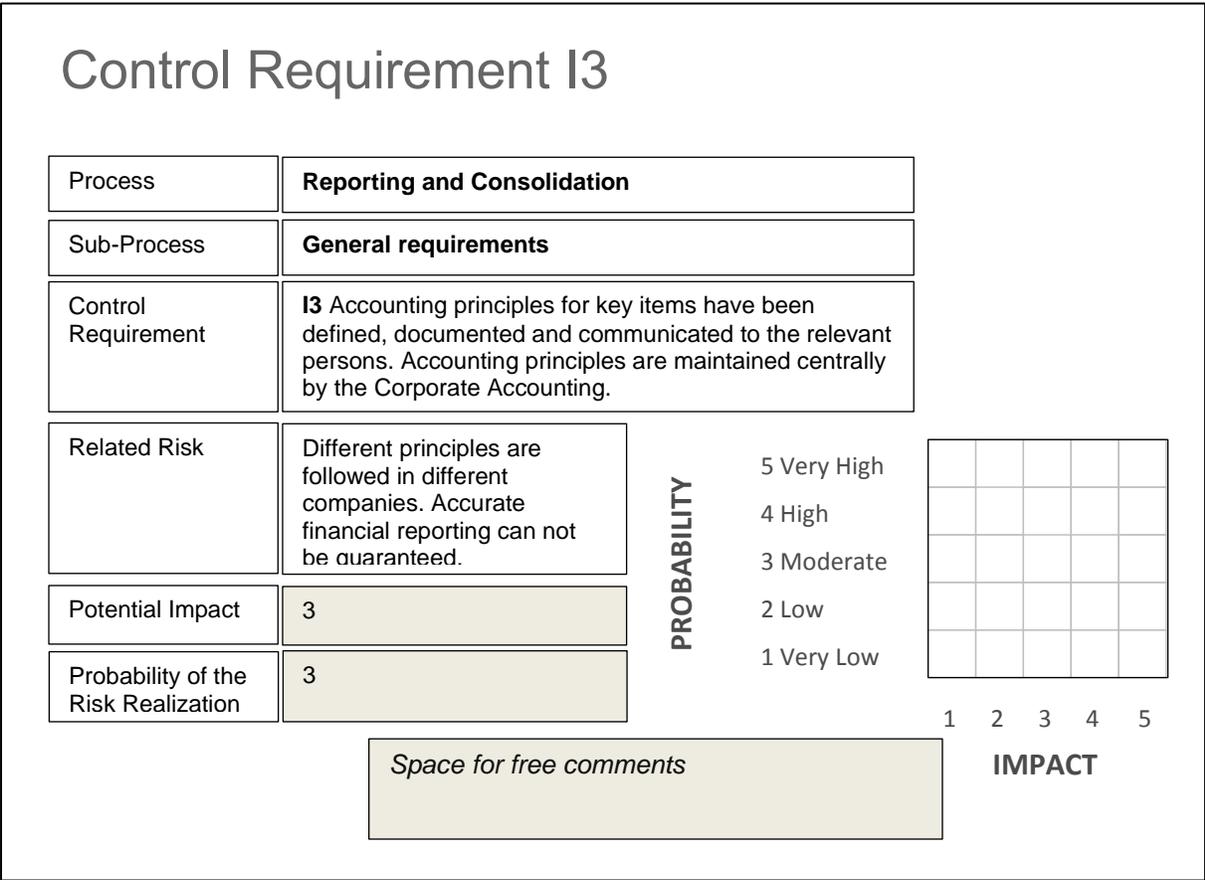


Figure 6 Example slide used in KCR risk assessment

A set of these templates was created in advance for all the workshops. In the end 5 workshops were arranged in this phase of the assignment: one for the Sales, other income and receivables and the Procurement, inventory management and payables processes, as these were covered together by the same personnel, two for the Derivatives process and two for Reporting and Consolidation process.

The workshop for the Derivatives process was divided into two separate meetings since the first workshop did not yet result the risk assessments. The related risks were not defined in advance and in order to be able to make the risk assessments the risks had to be described during the workshop. In addition, the validation of the KCRs was not completed. This was mostly due that the whole concept of COFR was not entirely familiar to the process responsible attending the

workshop and the time was needed for getting familiar with the way of thinking and conceptualizing the practical aspect of the work with derivatives.

The Reporting and Consolidation process was divided into two workshops on the grounds of that different people were responsible for the financial reporting of the legal units and for the group consolidation process. Therefore, the reporting concerning the legal units at group company level was covered in workshops with the financial controller of the parent company and the team leader of the general ledger, fixed assets and the inventories team.

The consolidation process was discussed with a controller from the Group Accounting function and the Head of Corporate Accounting. In the workshop tackling the consolidation process the risk evaluation was done on the control level from the request of the attendees. The reason for this was that they regarded the KCRs so abstract and extensive that the evaluations were difficult to make. This did not affect the evaluation process because in the consolidation COFR documentation had further another level (Task) which corresponded to the controls in other processes. Another aspect that affected the evaluation of the consolidation process was the ongoing system implementation, which had practical impacts on the control environment. The new consolidation system setup was expected to enhance the internal controls, but on the other hand some previous controls were broken due to the system update. Therefore the risk assessment was made on the grounds of the previous environment, but the development of indicators was done bearing in mind the new system.

The financial controllers responsible for the inventory accounting were invited to the workshops, which covered the Sales, other income and receivables and the Procurement, inventory management and payables processes. They had the hands-on experience on how the sales and procurement procedures effect on the financial reporting in terms of the volumes, valuation and timing of the transactions. Although the personnel with the operations coordinator status in the case company have the responsibility to make all the actual recordings to the operative systems, they did not have such a wide understanding needed for making the risk assessments. Operations coordinators were more involved with managing the contracts, pricing, invoicing and communicating the information related to these to all relevant stakeholders within the

organization, finance included, but the financial point of view was only a narrow part of their scope of duties.

An overall observation from the inventories workshop was that many of the control requirements could be reduced into one or two key requirements. According to the inventories team the correctness of the system input data determines largely the correctness of the inventory valuation. The operations coordinators and the Supply Chain Management function at the production sites make the sales and procurement inputs into the systems. This includes typing the volumes and prices. Therefore, the controls should be present already at earlier stages in the process to secure the consistency of the data in the systems because a large part of the errors were somehow related to input errors or missing data.

Some observations which rose from the risk assessment process are related to the difficulty of evaluating the probability or impact of the risks. In this business environment the impact of a single error is quite rapidly very high since the value of one transaction may run up to millions. On the other hand, the risk assessment is also dependent on the existing control environment. The probability is affected by the controls already in place and therefore the probability didn't rise very high in any of the control requirements. Moreover, if the impact of a single transaction was high, the comments revealed that the follow-up for these items is respectively more careful. The impact and the probability moved therefore across the red line in the following graph.

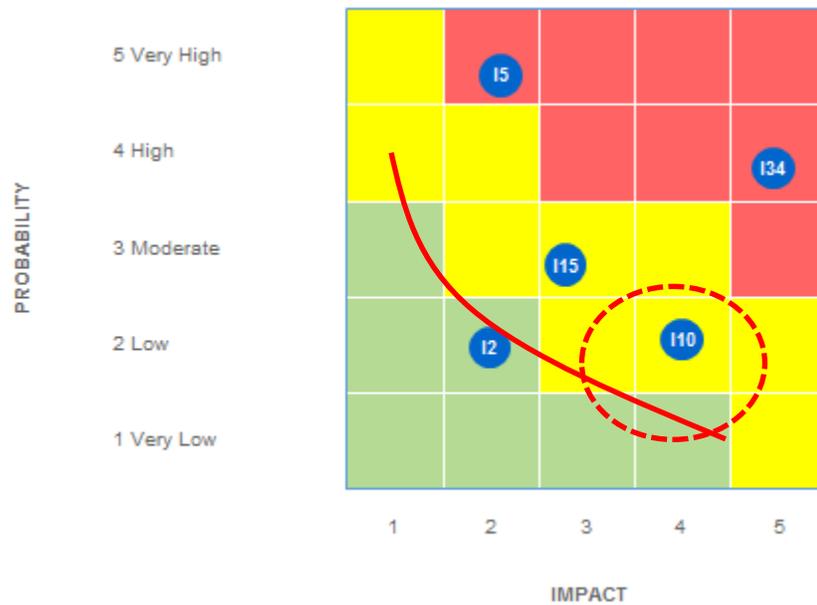


Figure 7 Overall behavior of the KCRs on the risk matrix

Therefore most of the control requirements fell into the area marked by the dotted line, the high impact and low probability risk. However, the required selection was able to be conducted this way and the process did result quite accurate illustration of the most important requirements for the validity of financial reporting. The accuracy of the assessment was further verified in the second set of workshops so that the persons responsible for the controls could in retrospect evaluate the rationality of the assessments.

The results from the first workshops are presented in the following table. KCRs with low risk assessment as well as those not directly effecting the validity of financial reporting are left out from this table. The table consists those KCRs which are further worked with in the second workshops. Regarding the consolidation process, the table presents the controls that were evaluated during the workshop. The KCRs related to these controls are included and presented in brackets.

Table 4 Results from the Workshop 1 – Most important KCRs according to risk mapping

<b>Sales, other income and receivables</b>		<b>Propability</b>	<b>Impact</b>	<b>Total risk</b>
A5	Orders are recorded in the systems completely, correctly (including correct delivery terms, VAT and excise duty codes) and timely. Only authorized users can record sales orders in the systems.	2	4	8
<b>Procurement, inventory management and payables</b>				
B8	Orders for goods, services and raw materials are recorded in an appropriate operative system completely, correctly and timely	3	5	15
B13	Goods received in inventory are recognized completely, correctly and timely.	3	4	12
B14	Inventory movements are recorded completely, correctly and timely. There is adequate segregation of duties between physical inventory management and posting of inventory movements. Physical inventory loss is monitored and reasons for exceptional losses are investigated.	3	4	12
<b>Transactions with financial instruments</b>				
F6	Derivative transactions are recorded completely, correctly and timely in the operative system designed for managing, reporting and invoicing purposes.	3	4	12
F7	Derivative transactions are recorded into correct books, including the correct assignment of the transaction as either hedging or as proprietary trading.	2	4	8
F10	At period end closings, all open derivative positions are correctly reported.	2	4	8
<b>Reporting and Consolidation</b>				
I8	Other journal entries are posted to GL completely, correctly and timely	3	3	9
I9	Only valid and authorized manual journal entries are posted to GL. Adequate audit trail exists for all manual journal entries.	2	4	8
I13	Recurring period-end postings (accruals, deferrals, provisions etc, as well as reversals of vouchers) are processed completely, correctly and timely. Only valid period-end postings are made.	3	3	9

I14	Intercompany items are reconciled completely, correctly and timely in the period-end closing.	2	4	8
<i>(I29 Complete, correct and valid data is entered for consolidation. Only authorized users have access to post consolidation journals / other manual entries.)</i>				
I29b	Journal entries are transferred to "S-entities" in Hyperion. Each S-entity has a specified person in charge. The person verifies that the journal-software entries have been transferred correctly into Hyperion.	3	3	9
I29e	A list of required consolidation journals for monthly, quarterly and annual closings is maintained to ensure that all required journals are made.	2	3	6
<i>(I30 Group consolidation is performed completely, correctly and timely.)</i>				
I30a	A list of the key reconciliations to be performed has been documented in the closing checklist of CA.	2	3	6
I30b	Through Hyperion Check-reports CA can ensure that company data is completely reported. Hyperion has certain check accounts to ensure that the consolidation is performed correctly.	2	3	6
I30c	Intra-group transactions are eliminated correctly	2	3	6
I33	Group-level annual and quarterly financial statements, including required notes and other disclosures, are prepared completely, correctly and timely	3	4	12

There was no systematic analysis done of the risk appetite in the case company concerning these KCRs (COSO 2004b, 16-17), since this was not the key issue in this assignment. The purpose of the risk mapping was to help to focus on the most essential items from the financial reporting point of view. The selection between green, amber and red items as well as the selection of the KCRs for further action was done purely based on the conversations in the workshops and discretion on what appeared as the key items for the reporting process. Therefore there were also some green items considered relevant for further action.

#### **5.4.4 Scouting Key Control Indicators**

After the risk assessment was done the plan was to identify the controls that specifically tackle these riskiest control requirements. The second set of workshops was arranged in order to go through the controls affecting these KCRs. Since the scope of the assignment was to develop monitoring by building up on the work done previously in the COFR process, the plan was to simply select the controls and define an indicator for each of these controls. These indicators would eventually illustrate how well the related control requirement has been fulfilled.

In the COFR documentation the following is stated considering monitoring:

In [the case company], ongoing management monitoring is supported through the use of Key control indicators (KCI). Key control indicators are financial or operational statistics or metrics that track the performance and effectiveness of one or more controls. Each key control indicator has a target level / value, and when the actual value deviates from the target value, it is a sign of potential problems in the process requiring further review and actions.

The outcome of the second set of workshops was to be the identification of these Key control indicators in order to monitor the performance of the controls. The second workshops were prepared by familiarizing with the internal control materials available. The plan was to utilize the documentation already in use in the company and to develop a set of indicators based the existing materials. The purpose of the assignment was not to develop any new controls since the COFR process indicated that all the significant controls should already be in place. Another implication of this aspect was that if the controls were in place, there should also be some documentation available of how well the controls are performing. The plan was to utilize this documentation and to develop the appropriate metrics and target levels for these controls.

The second set of workshops was organized in a less structured manner. The first task in the workshops was to validate the results from the first workshops and to see if the results correlated with the practical experience people had. For the most part the assessments made during the first workshops were considered appropriate, although minor changes were made.

The most significant change was made in the Derivatives process related to the following KCR , which was initially left out of scope: (F2) *Regarding hedging with [...] derivative financial instruments, the underlying exposures to be hedged are identified and reported completely, correctly and timely.* Even if this requirement was not met, the financial reporting related to the hedging decision could still be correct. However, after the first workshop it was granted that leaving the KCR out of the scope would not do justice to the real nature of the Derivatives process. This KCR was absolutely focal in terms of the unit's operations. The key of the derivatives process was to identify underlying exposure correctly in order to make appropriate hedging decision. This KCR was also the one that had lately caused most of the problems in the derivatives process and therefore needed special attention. It was eventually easy to make the decision to include KCR into the scope, since the revised COSO 2013 would also support a wider view on reporting and the underlying exposure is an important part of the internal reporting process. Eventually this KCR was one of the few ending up on the red in the risk matrix scale.<sup>3</sup>

When the risk assessments had been evaluated, the rest of the workshop was left for scouting the controls affecting the KCRs identified as the most important ones for the particular process. One choice, which was also made before the second workshops, was that we would concentrate at this point on the manual controls and leave out the system integrated controls. This decision had two reasons behind it. First of all, the system integrated controls were already monitored at some level by the IT function. If the data for some reason did not get transferred from one system to another, there were already controls and monitoring in place to indicate this. Also, the data input controls, such as the cross-checking rules, which prevent users to input invalid data on the data fields, are considered to be so efficient that they already prevent major errors from occurring. The second reason was related to this very aspect. In this assignment, the focus was to set up the monitoring for those controls that were considered the most critical and riskiest from the financial reporting point of view. Since the system related controls were presumed to operate efficiently and prevent the mistakes, there was no acute need to set up monitoring and build

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<sup>3</sup> The risk assessment resulted the following: probability 4, impact 4, total 16 (red).

indicators to measure the effectiveness of these controls. The focus was therefore given to the manual controls, which required human activity in order to ensure the validity of the reported financial information. It was noted, however, that the system related controls should be included under systematic monitoring at some point in the future if the target is to give a holistic picture of the state of the control environment.

The scouting of the key controls was done mainly by having discussions with the people responsible for the processes. The results from the previous workshops guided these discussions. One aspect that caused some trouble in the workshops was that the controls described in the COFR documentation for each of the process areas were not commensurable with each other. The second workshops started with the presupposition that the key controls described in the documentation would already lead to the items to begin the monitoring with. It was supposed that the controls described in the COFR excels were action by nature, meaning that the controls would be some concrete operative procedures relatively easy to measure. However, this was not the case but instead there were quite a variety of conventions on what was described as a control. Some of the controls were descriptions of the key control requirements at more detailed level. Some were rather lengthy process descriptions describing the various steps related to the control requirement. Overall it could be argued that the control descriptions in the COFR excels were rather abstract and they did not give much support on what were the concrete controls affecting the KCRs.

As the literature pointed out in chapter 3.2.1 there are many different approaches to what is meant by control – it can be a system, rule, practice, value or other activity that directs employees to act in a desired manner (Malmi & Brown 2008, 290). This needs to be taken into account in the case environment and not to restrict the use of these different viewpoints on controls. However, within the COFR documentation it should be clarified what is meant by control and the descriptions should be done similarly in order to verify that the controls are adequate to mitigate the risks. The COFR documentation done by the different process areas is similar to the Control Matrix presented by KPMG (2005). There each field of the matrix has a specific purpose and the Control Activities field describes the controls that are in place to

mitigate the risks. The fact that there seemed not to be common clarity on what the control field in the COFR documentation means and what is wanted to be written on it, made it rather cumbersome to identify the controls for our purposes.

There was a lot of discussion in the workshops of what are the controls that actually could be monitored and turned over into indicators of the control effectiveness. For example, the financial controller in the workshop for the reporting process argued that one of the best controls for the accounting function is to have skilled workforce who knows how the accounting rules should be applied in the case company. First this seems like an item which is impossible to monitor systematically, but actually there are some ways in which the knowledge level of the employees could be monitored. They could have a regular updating training required and the attendance to these trainings are then followed-up. However, this control does not give concrete assurance whether the transactions are actually recorded correctly or not. Eventually these concrete metrics on the quality of the processes were the ones this assignment was targeted to capture.

The purpose of the second workshops was to find the controls, which tackle the risks related to the identified control requirements. The discussions led often to the conclusion that there were only a couple of controls that actually covered the issues related to the most important KCRs. Again, when we turn back to the KPMG's (2005) guidance, we find that these controls are the Key Controls which in the KPMG's typology are the ones which should be tested. For COSO the Key Controls were the ones which failure could materially affect the organizations objectives or the ones that could prevent other control failures when working properly. (COSO 2008, 19) The identified key controls were often lists of reconciliations which were made monthly and the execution of these reconciliations had to be documented and recorded within a specific time frame.

After the workshops the first draft of the KCIs for each process were developed on the grounds of the discussions. The draft consisted of the description of the indicator, for example the number of the deviations occurred, and description of the related controls and the KCRs as well as the risks related to it. In addition, the type of the control, whether it was preventive, detective or corrective, was given as well as the data source for the indicator. One task for the assignment

was also to identify the target levels for these indicators. The performance of each indicator was decided to be reported by traffic lights. Therefore the scale and the thresholds for green, amber and red needed to be identified. This was one of the last tasks during the process and it was done by sending the drafts of the indicators to each of the attendees for comments and for defining the appropriate levels. For some cases, the final comments were given in an additional online meeting, where the composition of the indicator was finalized.

The final list of the composed indicators are presented in the Appendix B. In the following a description of the issues and problematics perceived during the process of composing these indicators is given for each process. The results from the additional meeting with the planning and control function are presented in the end of this chapter under Management reporting and forecasting, as well as the process indicators for the different functions under its own title.

### *Supply, inventory and sales*

The challenges related to the identification of the indicators for the supply, inventory and sales functions were mostly dealing with the broad scope of the KCRs. The attendees to the workshop found it difficult to capture any single important factor affecting the validity of the financial reporting. However, the ongoing monitoring of the process and the accumulation of the deviations related to it was perceived as the best way of indicating the functioning of the process. The major discrepancies emerging during the monthly closing process are systematically collected and followed-up on the deviation excel in the company's intranet. One of the most troublesome issues in the past were related to the so called in-transit inventories. These are inventories that are not situated in the company's premises but in transport, yet they should be calculated as a part of the company's assets as they are legally in its possessions. There had been incidents that some of these in-transit inventories were missing from the systems or that they were recorded on the wrong period or other such deviations from the expected process.

These in-transit items were considered so important that they should be followed separately under indicator called *number of deviations related to in-transit inventories*. This indicator is related to the KCR B13<sup>4</sup>. Another indicator for this KCR is the *percentage of inventory confirmations related to internal and external inventories received on time*. These confirmations are similar to the balance confirmations received from banks in the context of preparing the financial statements. The inventories are such an essential part of the assets in the case company that the absence of these confirmations has actually delayed the signing of the auditor's opinion. Therefore the share of the missing confirmations by the deadline (the 4<sup>th</sup> working day in the company's closing process at the current state) was decided to be one of the indicators for this process.

The KCRs A5<sup>5</sup> and B8<sup>6</sup> were in the case company related to the handling of sales and purchase transactions, and although these were seemingly separate functions, in practice, they were operated by the same personnel and monitored by the same controls. Therefore it was appropriate to give them a common indicator and these items were best followed by the number of deviations on the Deviations excel. For the indicator additional information needs to be given on which process the deviation is related to. In addition, a short description of the problem should be included to increase the value of information given by the indicator.

Although the KCR B14 was one of the KCRs perceived as the most important during the first workshop, it was later noticed that the items that were thought to be part of this KCR (in particular the in-transit inventories) were actually followed under B13. Therefore, no indicator was needed for this KCR.

Another aspect that rose during the workshops with the Supply, inventories and sales processes was that the role of the operations coordinators was perceived as crucial for the validity of the

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<sup>4</sup> Goods received in inventory are recognized completely, correctly and timely

<sup>5</sup> Orders are recorded in the systems completely, correctly (including correct delivery terms, VAT and excise duty codes) and timely. Only authorized users can record sales orders in the systems.

<sup>6</sup> Orders for goods, services and raw materials are recorded in an appropriate operative system completely, correctly and timely.

information in the systems. Although not all of the deviations were related to the input data or to some missing information in the systems, it was however highlighted that the information is not always timely. The process has improved from what it has been previously in a sense that the information in the turn of the month is now rather accurate. The operations coordinators are pushing the data into the systems towards the end of the month and the monthly closing deadlines but since the transactions are not always recorded on daily or weekly basis, there is a larger risk that something is missing when the closing of the books is done. The attendees said that they usually are able to correct the mistakes before the deadlines but there is often rather laborious process for finding the causes for them and therefore unnecessary extra work, which could be prevented by timely recording of the transactions. This should be monitored in order to push the operations coordinators to record the transactions on a timely basis. During conversations with the different parties in the case company a use of so called *end-of-day* or *end-of-week report* was brought up as a solution for this matter. This kind of report was under development during the assignment in order to monitor the timeliness of the information in the operative systems, but there was not an opportunity to include it into the scope within the timeframe of the assignment. Therefore, it is only pointed out here that the utilization of such report should be explored during the future development of the COFR monitoring.

### ***Derivatives***

For the Transactions with financial instruments, or derivatives process as it is called for simplicity, the KCR F2<sup>7</sup> became the most important item for monitoring. This KCR was first scoped out of the whole monitoring process because it does not directly affect the validity of financial reporting but it was later included because of its substantiality for the derivatives process. This substantiality marked the composition of the indicators and there were eventually four different options for monitoring the controls tackling this KCR. Two of the indicators, the *percentage difference between the hedged and the actual physical inventory position in 2 weeks retrospect* and the *volume difference between the inventory position in Prima and the actual*

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<sup>7</sup> Regarding hedging with derivative financial instruments, the underlying exposures to be hedged are identified and reported completely, correctly and timely

*physical inventory reported in VAHA*, were targeted to illustrate the quality of the hedging process. In the core of the hedging process lies the correct valuation of the underlying position and against this valuation the hedging decisions are made. If the hedged and the underlying position do not correspond to each other, this leads to over- or under-hedging depending on the situation. These indicators illustrate whether this has been the case or whether the hedging decisions have been based on correct valuations.

The other two indicators, *the number of discrepancies recorded in Transaction risk management control point 3 and 4 in Compliance monitor*, are more generic indicators and could be used to illustrate the performance of the process in general. The control point 3 in the Compliance Monitor is designed for reporting any missing deals or transactions in the online reporting system and the control point 4 is related to the recording of the hedging transactions themselves. The need for timely information is particularly essential for the derivatives process and the use of end-of-day report was highly supported by them for controlling purposes. However, this indicator could shed light on how the defects in the information affect the work of the derivatives process.

The additional meeting with the derivatives personnel resulted also that there will be an overall assessment of the process during the period added into the Compliance Monitor. This would work as a process indicator for the derivatives process and correspond to the monthly self-assessments given by the controllers and team leaders in the Financial Services.

### ***Reporting and consolidation***

The indicators for financial reporting were composed around the existing control mechanisms within the process. For the KCRs I8<sup>8</sup> and I13<sup>9</sup> the closing checklists maintained in the company's intranet seemed to be the most important control to make sure all the necessary bookings are made according to the agreed time table. Therefore, it was suggested that the indicator would

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<sup>8</sup> Other journal entries are posted to GL completely, correctly and timely

<sup>9</sup> Recurring period-end postings (accruals, deferrals, provisions etc, as well as reversals of vouchers) are processed completely, correctly and timely. Only valid period-end postings are made.

follow the timely filling of these closing checklists. This would be done in respect to the timetable and deadlines for each of the tasks. One arguable concern related to this indicator was, however, the risk that the use of the closing checklist would be manipulated. The lists could be filled in order to meet the targets for the indicator although the task in itself was not yet done. Therefore the financial controller pointed out that in order to make this indicator efficient attention needs to be given on the usability and the appearance of the checklists, as well as on how the checklists would genuinely become a tools for supporting the process.

The control tackling the KCR I9<sup>10</sup> is related to the segregation of duties. Every manual journal entry needs to be approved by someone else than the person who created the journal. The accounting system is designed in the manner that the entries are posted into the system even though the approval has not yet been done and sometimes there may be a long gap between the posting and approval. This feature is enabled for practical reasons – sometimes the tight schedules do not allow the review of the journals and yet the postings need to be made in order to have all necessary items booked in time. However, it is not desirable that this feature is exploited and the approvals are deliberately postponed. The approvals should be made at the same pace with the bookings and although controllers do not have the time to go through every line item when reviewing the journals this process was considered the best control for ensuring the postings are valid and correct. Therefore the indicator for monitoring the journal validity was decided be composed around this approval process. The *percentage of eMemo vouchers approved on 5th working day* illustrates how large portion of the journals is validated within the reporting deadline.

The KCR I14<sup>11</sup> related to the intercompany items was put together with the KCR I30<sup>12</sup> from the consolidation process and a common indicator was sought for both of these KCRs. Intercompany items are often perceived as cumbersome in large corporations with lots of transactions between

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<sup>10</sup> Only valid and authorized manual journal entries are posted to GL. Adequate audit trail exists for all manual journal entries

<sup>11</sup> Intercompany items are reconciled completely, correctly and timely in the period-end closing.

<sup>12</sup> Group consolidation is performed completely, correctly and timely. (Intra-group transactions are eliminated correctly)

the group companies and the same goes with the case company. Although the perceived errors in these intercompany items have finally been matched and they seldom had a large impact on the validity of the financial reporting the matching process has taken a lot of time and therefore it deserved attention in this assignment as well. The challenge related to the matching process was that the errors are perceived and explained at too late phase within the reporting process.

The purpose of the indicator *total € difference in internal items against each counterparty* is to increase awareness that these items are followed-up and that they should be matched in timely manner. When using this indicator a further breakdown of the difference needs to be made in order to find out the *real* difference between the counter parties. This means that some of the differences are explained by acceptable causes, such as the exchange rates used when transactions have different accounting and invoicing currencies, and only the unexplained difference is of interest within this indicator. The ongoing implementation of the new consolidation system imposed some restriction for defining this indicator. In the previous system there was a retrieve built into the system which followed-up the intercompany differences but to the new system this was not yet built up. For now, the difference can be followed up by the HFM matching report, but this does not support the breakdown of the difference into acceptable and unexplained difference and this reporting needs to be developed in the future.

For the consolidation process the other KCRs evaluated as important were the I29<sup>13</sup> and I33<sup>14</sup>. The main concern related to these KCRs was that whether the external reporting is done according to the applicable accounting principles and that there are no material errors in the financial statements. According to the attendees in the workshop the best indicator to reveal any material errors within the financial statements would be the amount and severity of the audit findings reported by the external auditors. Depending on how the external auditors report their

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<sup>13</sup> Complete, correct and valid data is entered for consolidation. Only authorized users have access to post consolidation journals / other manual entries.

<sup>14</sup> Group-level annual and quarterly financial statements, including required notes and other disclosures, are prepared completely, correctly and timely.

findings to the case company, these could be used as the data for the indicator *Number of Audit Findings*.

However, the simple count of the findings was not considered appropriate but the quality of these findings should be acknowledged when setting the target levels and thresholds for reporting green, amber or red for this indicator. For example, the nature of the findings is sometimes so complex that it may take more than a one year to fix the issues (IT system related issues, for instance). It was perceived more illustrative to show the audit findings that have previous year been red but changed into amber or green than to judge the performance merely by counting the findings.

The use of closing checklists was similarly proposed for the consolidation process as for the financial reporting process. This KCI would give concrete support on that all the necessary consolidations and as well as the task for finalizing the financial reports would be done. The consolidation process has similar task lists for the reporting process as the accountants have, but it is not used as a concrete checklist, which is followed up afterwards. The nature of the consolidation process was argued to differ from the earlier steps in the reporting chain so that this style of usage of the checklists was not considered appropriate or practical. Therefore, the KCI *All necessary tasks done in time* was left on the list but only as a proposition for future development if conceived appropriate later on.

### ***Management reporting and forecasting***

After the second set of workshops was carried out it was found useful to inquire from the planning and control function if they had an opinion on how the reporting process could be evaluated from their point of view. The planning and control function gets to analyze the figures after the reporting for the previous period is closed, and although they are not involved with the reporting process in itself are they however the key end users of the produced financial information. The expectations before the meeting with the planning and control directors were mainly that they could give an overall assessment of the fluency of the reporting process with appropriate intervals in the future. The directors had nonetheless sharp observations and concrete

suggestions for monitoring the performance of the reporting process and therefore these suggestions are added on the list of propositions for KCIs. The KCIs were then linked to the corresponding KCRs according to the perceived issues they were thought to tackle by the author of this thesis.

The main concerns the planning and control function had were related to the validity of the reported financial information within reporting deadline. It turned out that the reported figures often contained errors and the business control was not able to analyze the information as planned but they had to start the process all over again when the corrections were made. This reduced the time available for making the analysis and explaining the performance to the management. Therefore the KCIs *€ amount of corrections made in HFM after the 6th working day* and *€ amount of corrections made on the period which are related to transactions from previous periods* are designed to indicate the validity of the reported financial information within the agreed timeframe. For the first KCI there is already data available and it is followed up on the Financial Services process report. The corrections made that have an effect on EBIT are the most essential from the planning and control point of view and therefore they should be monitored on this indicator.

After the corrections have been made for the reporting period there sometimes still remains errors which are then corrected on the following periods. These items are not systematically followed up at the moment and there were some open issues on how the information could be captured, for example how to ensure the same corrections are not reported twice for the indicator. Therefore this KCI cannot be implemented at the moment but it is an optional for future development.

The third KCI, *€ amount of unexplained difference between the estimate and the actual result*, is related to the performance of the process within the planning and control function. The monthly target is to explain the difference between the previous estimate and the actual reported result for the period so that unexplained differences are not left open. These unexplained differences are followed up on internal management reporting and they can be used as a data for the indicator.

**Process indicators**

Finally, the list of KCIs is completed by an option to follow up the overall process of financial reporting at more approximate level. The Financial Services process report is gathered monthly and it contains self-assessments given in the form of traffic lights and short verbal description by the different company controllers and process teams. These self-assessments summon up the performance and the perceived process deviation and as such, they complement the KCIs for the different processes. Since the KCI report is at first stage planned to be composed yearly, the given self-assessments should be combined into a single indicator by using the yearly average. The following picture illustrates one possibility of reporting the process indicator.

KCI	Process	BA / Legal Unit	Monthly Status			Deviation Explanations	Year End Status
Average of the monthly evaluations given by each process area on Financial Services Process report	Financial control	Legal Unit A	Jun Jul Nov Dec	Jan Feb Mar Apr May Aug Sep Oct		System: 6 FX rate: 1 IC items: 1 Mapping: 1	 
	Financial control	Legal Unit B	Jan Feb Mar Apr May Jun Jul Sep Oct Nov Dec	Aug		System / IC items 1	 
	Inventories	Business Area A	Feb May Jun Aug Oct Nov Dec	Jan Mar Apr Jul		Several different issues	 
	Inventories	Business Area B	Jan Feb May Aug Oct Nov	Mar Apr Jun Jul Sep Dec		Late bookings 2 Incorrect bookings 2 IC Items 1	 
	Intercompany	N/A	Jan Sep Oct Dec	Feb Mar Jun Jul Aug Oct	Apr, May	System 5 Incorrect bookings 2	 

Figure 8      Template for reporting the process indicators

It is possible to collect the reasons for deviations from the process report and to compress them into descriptions of few words. This again increases the informative value of these indicators. Similarly the overall assessment given by the Derivatives process can be presented in the same manner and included to the process indicators.

#### **5.4.5 Reporting process for Key Control Indicators**

After the KCIs were identified and specified the final task in the assignment was to define the process for reporting the results for the management and board of the case company. The support for the reporting process is derived from COSO (2008) as well as from KPMG (2005). However, the agreed process was developed during discussions with the ICM of Monit Inc. and designed specifically to fit the current needs and prerequisites of Monit Inc.

The ICM of Monit Inc. thought it would be realistic to gather and report the results of the KCIs for the management once a year, now in the early stages of the formalized monitoring of COFR. Later on, when the process and the KCIs are more established the KCI results can be gathered on a quarterly or even monthly basis. Even if the results will be gathered more frequently, the management should have the aggregated results of the KCIs once a year as part of the annual internal control process. This means that the results are reported in late January – early February each year.

The reporting process is presented in the following flowchart. Each process team is responsible for gathering the information and reporting it to the Internal Control Manager. The ICM consolidates the information and reports it to the Vice President of the Group Accounting and Services and the CFO, who finally reports to the AC when needed and considered appropriate.

# KCI Reporting Process

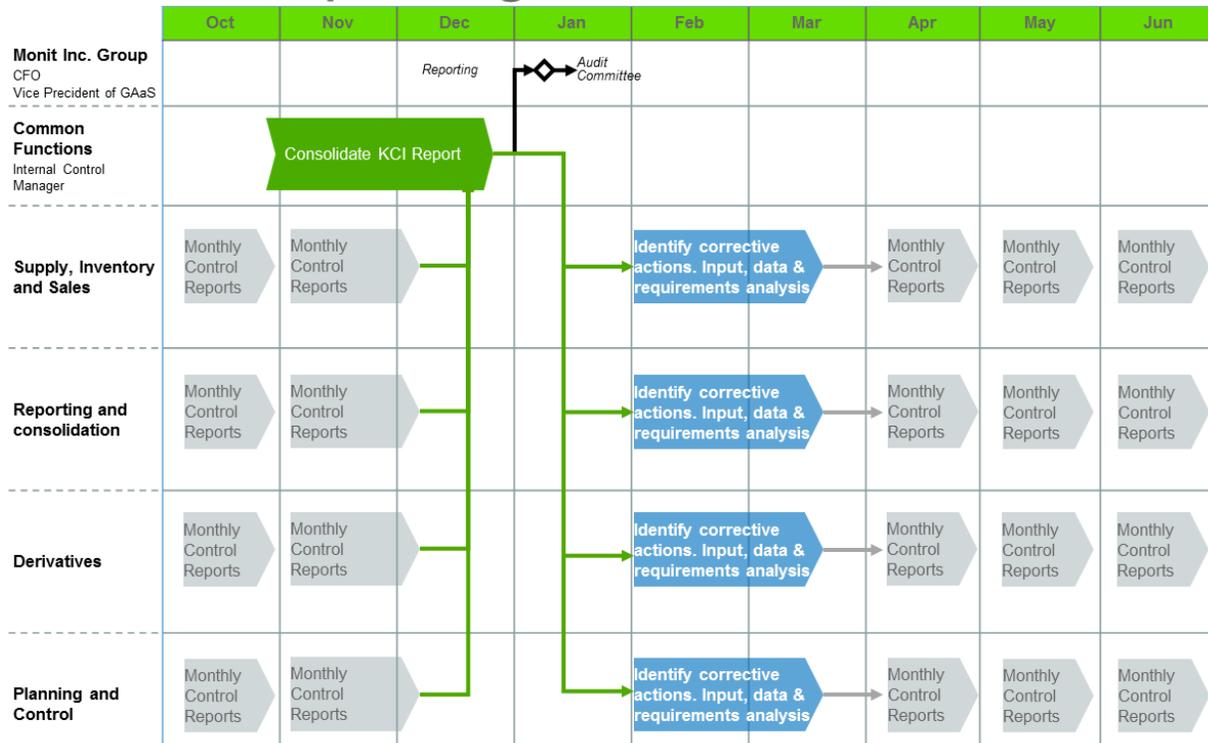


Figure 9 KCI Reporting Flowchart

The monthly control reports in the flowchart represent the control execution integrated into the normal operations in each of the processes. The KCI reporting requires that the possible control deficiencies are recorded when the control is executed. This means that for some controls the results are followed-up quarterly or yearly, not monthly as the picture illustrates, depending on the nature and frequency of the control. The KCI Report is consolidated from these control reports on yearly basis.

It is necessary to evaluate the KCIs and the target levels, as well as the whole internal control environment on a regular basis for the monitoring to stay effective. This can be done on different levels and in different extent. In the beginning of the following year the results of the KCI reporting are analysed and if some specific corrective actions are needed, these are identified and

communicated to the processes. At the same time the data requirements are reviewed and lightly evaluated in order to make minor adjustments if needed.

The necessary corrective actions in order to have the process functioning as designed are also reviewed monthly in each of the processes when the underlying controls are being executed. If major control deficiencies are noticed, these should be handled immediately. However, the corrective actions described in the flowchart represent the higher level actions taken to tackle some areas that are considered critical by the management and that have not performed as expected during the reporting period. For instance, this could be the case if the control has failed several times for several different reasons during the reporting year and the management decides to target resources and special attention to these items.

The KCI Development process added to the flowchart in the following picture represents the more thorough development and assessment process for the KCIs that ought to be done approximately every third year. The KCI development should be done regularly in order to go through the risk analysis and assessment of the control environment. The same methods as were presented in this case study can be used to evaluate the timeliness and effectiveness of the current KCIs.

# KCI Development Process

Development only on every third year

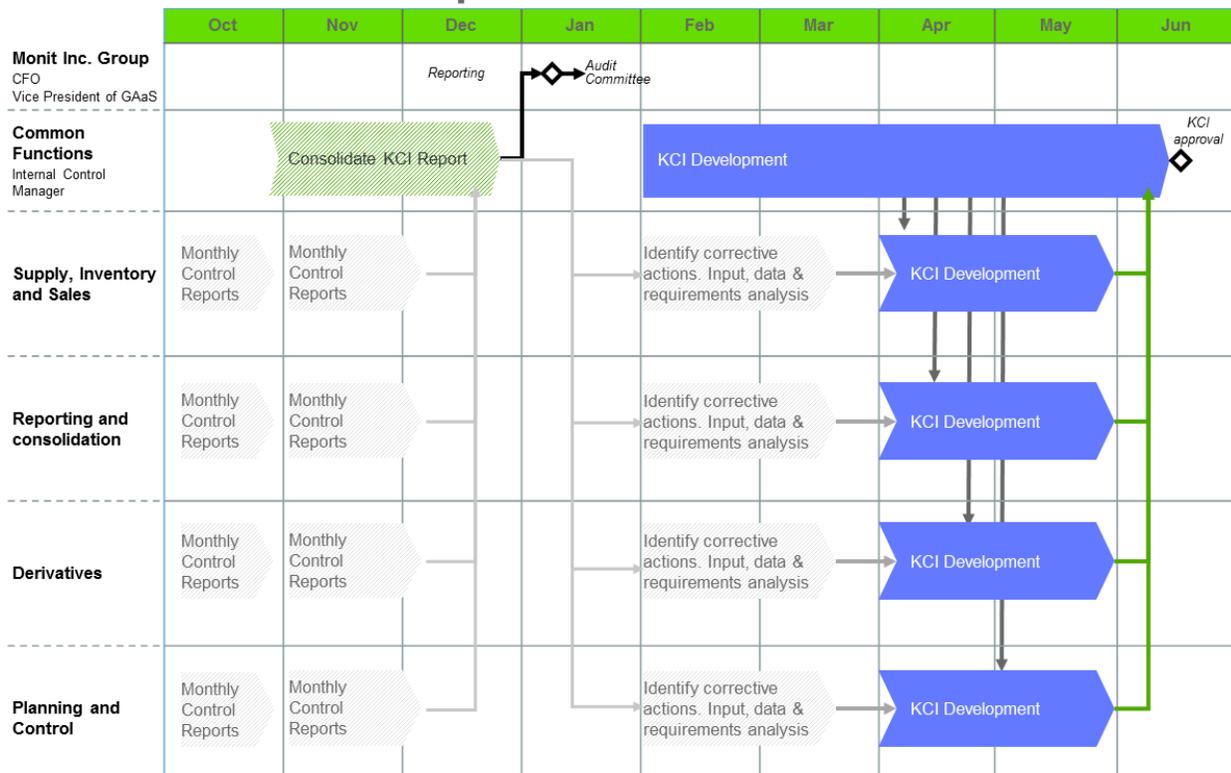


Figure 10 KCI reporting flowchart, with development every 3<sup>rd</sup> year

In addition, there needs to be a way of reviewing that all the necessary requirements and controls are actually included into the COFR documentation and this could be done together with the KCI development process.

## 6 DISCUSSION & CONCLUSIONS

The purpose of this thesis was to answer the following research questions: What are the key determinants in developing and implementing the Monitoring Activities component of the COSO Framework and how the effectiveness of the internal controls is monitored and measured?

According to COSO and the recent research, the internal control system of an organization is a highly interrelated process with implications to the organization's culture, business environment, operations and structure (e.g. Agbejule & Jokipii 2009, COSO 1994). The monitoring component of the COSO Framework can also be seen as a multifaceted function, where the informal inquiries and outspoken principles form the softer end of the spectrum as the KCIs covered in this study represent the more formalized monitoring methods. Foremost, the developed KCI metrics are not intended to cover the whole monitoring aspect of the COSO Framework at Monit Inc. but to give the management a more formalized and structured conception of what is the state of internal control within the organization. There is a lot more to monitoring than the individual metrics, but, the formalization may help the organization to manage better the risks involving their financial reporting processes.

The selected process for developing the KCIs was largely supported by the literature, particularly the COSO Monitoring Guidance, although the KCIs themselves were only rarely referred in any relevant sources. The support for developing such metrics was rather weak and relied only on one commercial document (Xactium Limited 2013). However, it was the initiative of the case organization to develop such metrics and therefore this approach was chosen "ex ante".

The development of these metrics was done trying to follow the principles of COSO in that the monitoring should be rather built into the existing business processes than built onto them (COSO 1994, 14, 51-52). This was not fully possible, since there were no pre-existing information gathering procedures in all of the control activities involved in the scope of the assignment. Therefore, it was necessary to suggest some additions to the existing procedures, but often this was practicable with little effort and also reasonable since it was perceived to increase

the reliability of the control. This was the case, for example, in the Derivatives process, where an overall assessment of the process was added into the control procedures. In most cases the information was already available from the systems or it was followed-up manually in different control procedures, and therefore the KCI was only adding up the already existing information.

The process deviated also from the COSO recommendations regarding the risk assessment. The COSO Monitoring Guidance states that this process should be done disregarding the effects of control activities, meaning that the risks should be considered without the presence of the internal control. (COSO 2008, 20) This was disregarded during the workshops since the actual perception of the current threads to the process was considered more relevant than a hypothetical setting where no controls were present. Therefore, the risk analysis inherently consisted of an initial evaluation of the current effectiveness of the control procedures. If the approach would have followed the COSO recommendations, it probably would have resulted in some high risk control requirements which in fact have effective controls in place. Then the monitoring activities would have been targeted to these items, even though the real risk of control failure would be somewhere else.

Jääskeläinen et al. (2013) suggested that the definition of the metrics for monitoring service oriented industry should be done in a series of workshops. This approach was applied in the case assignment, although in a lighter format than what Jääskeläinen et al. had suggested. The workshops were used in the planning and scoping phase to identify the KCRs with highest risk profiles and then in the actual KCI definition phase. For identifying the risk areas in items affecting financial reporting the workshop approach was particularly successful and resulted in rather clear understanding of the weakest links in the process. The workshop approach did also reveal some areas that were considered important for the validity of the financial reporting but which were not systematically controlled or followed-up in the organization. All in all, there were many advantages in arranging the developing process in workshop format. The personnel were able to make an impact on what was going to be measured by the KCIs, which again contributes to the acceptance of such metrics. The documentation of the inputs from the

workshops was also efficient since the templates were filled already during the meetings and the outcomes were visible for all the attendees immediately.

Monit Inc. had done quite extensive work around the internal controls prior to this assignment and the formalization of the monitoring activities was done relying on the existing COFR documentation. In the following there are some remarks on the COFR documentation of Monit Inc. The documentation consisted of the identified key processes, key control requirements for these processes and key controls. In addition, there was a risk column related to the key control requirements but this field was filled inconsistently.

As the risk based approach was selected as the method for developing the KCIs it would have been helpful if the risks were defined to all of the KCRs. Now, for some of the processes this was not done in advance, but it was needed to be done on the fly. Although the KCI development process was not significantly slowed down and the KCRs themselves inherently point towards the risks they are addressing, it might also be beneficial for the organization that the risks behind the requirements are explicitly documented. Furthermore, the identified risks should now be added into the existing COFR documentation for future follow-up. Later on, it is important to evaluate whether there are any risks that are not acknowledged by the existing controls or control requirements. This kind of evaluation could be included into the suggested more in-depth KCI development process done every third year (see 5.4.5 Reporting process). This is particularly addressing the issue of changes in the business environment, both internally and externally.

Furthermore, the consistency of the data should be secured, for example, by having clear definitions of what is meant by control and control requirement, and also instructions of how it should be presented in the documentation should be included into the COFR instructions. When different people in different units are filling in the COFR documentation this leads to very different conventions in how the information is presented without a proper guidance. In order to make the different units and their controls comparable with each other the data consistency needs to be addressed.

Depending on the process area, there were rather different conventions on how the controls were described. In general, if the control is defined as an action by which the current performance or process is compared to the planned performance, the definition of one particular control should probably contain some kind of prescription of actions needed in order to perform the control. However, in the COFR documentation there were often rather lengthy process descriptions or statements of the planned outcome or process instead of explicit control descriptions and so there were no specific control descriptions available for the most of the requirements. These were often replaced by more detailed descriptions of the control requirement, i.e. what kind of performances should be included into the fulfillment of one particular control requirement. This made the execution of the second workshops much more difficult than anticipated. Consequently, KCIs were created based on the availability of data, meaning that it was necessary to scout what kind of data was gathered from the different control activities and create the KCIs based on the data available.

Regarding to this notion there are some implications from the COSO Guidance that could be more rigorously applied in Monit Inc. COSO suggests that there should be proper segregation of duties in terms of who is executing control and who is monitoring the control. Ideally this would be organized so that the one who is collecting and reporting the data to the ICM is always a one step higher in the hierarchy than the one responsible for executing the control. Now in most cases there is no clear line between these roles and there is a risk that the results are manipulated in order to give more favorable picture of the control performance. However, this is not currently considered as a major risk in the organization because there are no financial strings attached to the control performance. If later on the organization decided to link the compensations to the control performance, the objectivity aspect needs to be evaluated more seriously.

Even though this assignment focused on monitoring the manual controls, in order to enhance the quality and credibility of the internal control documentation, the listing and evaluation of the effectiveness of the system-integrated controls could be included into the COFR documentation in the future. The identification of the key system related controls would give further support on

the effectiveness of the internal controls system at Monit Inc. and increase the information quality given by the monitoring component.

For further reflection for Monit Inc. was left to consider how to keep the control issues viable and important for all who are responsible for the validity of the financial reporting. One possibility for supporting this would be to link the KCIs, or at least some of them, to the compensation scheme as suggested by Ahokas (2012, 89-90). This was discussed with the personnel responsible for the consolidation process and some conditions were raised up regarding the linking of bonuses with the control indicators. The biggest concern was that the reliable reporting of the control weaknesses could be compromised if the reporting influenced the individuals' personal gain. Therefore the reporting process needs to be managed so that there is no possibility for covering up the results.

However, when the monitoring procedures are designed and implemented, one needs to carefully consider the cost-benefit aspect related to the monitoring of internal controls. The COSO argues that the organizations may benefit from the effective monitoring on multiple levels but in fact there is only limited number of studies supporting this argument. Masli et al. (2010) did find connection between the automated monitoring and reduced control deficiencies and smaller increases in audit fees. However, they had not found any other studies supporting their findings and one needs to be critical in assessing does the organization received any real business benefits from building such formal monitoring framework.

Organizations need to evaluate that the developed monitoring procedures and the metrics are not artificial, that they actually flow with the existing processes and do not cause excessive work to the accounting personnel. The concern related to this thesis and the case assignment is in fact, that do the developed metrics reflect the processes in a way that is relevant to the organization. The benefit of the workshops was that they resulted in concrete suggestions and answers to the questions at hand, but one may argue that they set a pressure on the participants to give answers to non-existing problems.

The limitations and the suggestions of further study are partly related to the lack of follow-up and validation of the developed construction. This thesis was conducted by following the principles of the constructive approach. However, as it was stated in chapter 4.2, this thesis is lacking the evaluation of the practical implementation of the Key Control Indicators. The time constraints did not allow the execution of this aspect of the constructive research method but it would be extremely interesting to conduct a follow-up study on how widely the suggested KCIs were actually taken into use and what were the reasons for leaving some out, if that was the case.

The limitations are furthermore related to the design of the study. The author of this thesis was highly involved with the KCI development process, and although the development was planned to be done so that the personnel of the case organization provided with the data inputs, there is still a risk that the results are biased because of the author's personal judgments.

For further study, it would be interesting to observe what kind of monitoring procedures other similar scale companies have adopted and how effective and efficient they are perceived. There was a lack of evidence around this area in the academic literature, and therefore the topics related to different kind of monitoring procedures, levels of monitoring, possible negative effects on monitoring and such would be beneficial in order to understand the phenomenon more profoundly.

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## APPENDIX A

### Key Control Requirements – Reporting and Consolidation Process

I1	Accounting and financial reporting systems access is restricted to the appropriate people.
I2	Accounting and reporting personnel's roles, responsibilities and back up persons are clearly defined and documented.
I3	<b>Accounting principles for key items have been defined, documented and communicated to the relevant persons. Accounting principles are maintained centrally by the Corporate Accounting.</b>
I4	GL master data is maintained completely, correctly and timely. Only authorized changes to GL master data are made.
I5	<b>Company-level chart of accounts is in accordance with the Group chart of accounts. All GL accounts are placed in the appropriate section of the financial statement structure. There are documented instructions defining which items to book to which accounts.</b>
I6	<b>Interfaces between the operative systems and the accounting system are maintained centrally by authorized users only.</b>
I7	<b>Sub-ledger (A/R, A/P, fixed assets) postings to GL are complete, correct and timely.</b>
I8	<b>Other journal entries are posted to GL completely, correctly and timely.</b>
I9	<b>Only valid and authorized manual journal entries are posted to GL. Adequate audit trail exists for all manual journal entries.</b>
I10	<b>Foreign currency denominated transactions are accumulated correctly in the General Ledger. The exchange rates for foreign currency denominated entries are authorized, valid and updated.</b>
I11	<b>Financial closing policies and procedures are documented and maintained.</b>
I12	<b>Accounting periods are closed in a timely manner and posting to prior periods is prevented. Only authorized users are able to open and close accounting periods.</b>
I13	<b>Recurring period-end postings (accruals, deferrals, provisions etc, as well as reversals of vouchers) are processed completely, correctly and timely. Only valid period-end postings are made.</b>
I14	<b>Intercompany items are reconciled completely, correctly and timely in the period-end closing.</b>
I15	Main GL accounts are reviewed and specified at period-end. A list of the GL accounts that needs to be specified is maintained.
I16	Legal archiving has to be complete, correct and possible to audit.
I17	<b>Period-end transfer of accounting data to the reporting system is complete, correct and timely.</b>

I18	Regarding certain notes in the Group financial statements requiring further disclosures, there are defined and protected templates in Hyperion that are used for reporting the necessary information, and only persons in the Corporate Accounting have access to modify the templates. The units report the respective information completely and correctly.
I19	<b>Annual and quarterly financial statements for each reporting entity, including required notes and other disclosures, are prepared completely, correctly and timely.</b>
I20	<b>Access to modify the final balance books for each reporting entity and any related accounting files and reports is restricted to authorized users.</b>
I21	Profit / cost center structure and Hyperion structure is appropriate for the management information needs. Only authorized users have access to maintain the profit / cost center structure and Hyperion structure. Modifications to the profit / cost centers are monitored to ensure that they are correct and complete. New entities and levels in Hyperion are only created by the Corporate Accounting, and to FINA by the authorized persons within business areas / common functions.
I22	Profit / cost center allocations are performed automatically in the system based on pre-defined rules. Only authorized users are allowed to maintain the allocation rules.
I23	Profit / cost center postings are valid, complete, correct and timely.
I24	Internal financial reporting and forecasting utilizes standard ERP / Group reporting system reports wherever possible. Access to sensitive reports, query tools and report formats and definitions is restricted to authorized personnel.
I25	Each legal company reports their forecasts for IFRS result, comparable operating profit, cash flows and return on capital completely, correctly and timely, according to the instructions defined in the Controller's manual.
I26	Common forecasting assumptions are defined and approved by top management for key parameters such as currency, crude oil price and refining margins.
I27	There is follow-up of the forecasting accuracy and deviations from the forecast are explained by the business management.
I28	Group reporting system master data (chart of accounts, legal & operative organization structures, conversion tables, exchange rate tables) are defined and maintained centrally and by authorized users only.
I29	<b>Complete, correct and valid data is entered for consolidation. Only authorized users have access to post consolidation journals / other manual entries.</b>
I30	<b>Group consolidation is performed completely, correctly and timely.</b>
I31	<b>Exchange rates used in the Group consolidation are authorized, valid and updated. Only authorized users have access to maintain exchange rates in the Group reporting and consolidation system.</b>
I32	<b>After the consolidation has been finalized, the consolidated financials are locked from further changes. Only authorized users can lock and unlock the consolidated financials.</b>
I33	<b>Group-level annual and quarterly financial statements, including required notes and other disclosures, are prepared completely, correctly and timely.</b>
I34	<b>Access to modify the press release templates and annual consolidated financial statements and any related accounting files and reports is restricted to authorized users.</b>

## APPENDIX B

### Key Control Indicators

Name of the KCI	Related process	Related KCR	Control description	Monitoring type	Monitoring Frequency	Data source	Target level (green)	Actions needed (amber)	Unacceptable level (red)	Additional information
# of deviations	<p>Sales, other income and receivables <i>(Acquiring and accepting orders for delivering products or services to accepted customers)</i></p> <p>Procurement, inventory management and payables</p> <p><i>(Placing orders for goods, services and raw materials)</i></p>	<p><b>A5</b> Orders are recorded in the systems completely, correctly (including correct delivery terms, VAT and excise duty codes) and timely. Only authorized users can record sales orders in the systems.</p> <p><b>B8</b> Orders for goods, services and raw materials are recorded in an appropriate operative system completely, correctly and timely.</p>	<p>The correctness of the information related to the recorded sales, purchases and inventories at month end is checked according to the tasks and responsibilities of the Data Quality process. Significant discrepancies are recorded in the Deviations report.</p>	Corrective	Monthly	Deviations reports in the company's intranet (Group Accounting and Services / Deviations)	0	1-3	≥ 4	Deviations categorized by process. Additional verbal explanation needed about the causes for deviation. Only the most significant deviations are selected for this indicator.
% of inventory confirmations related to internal and	Procurement, inventory management	<b>B13</b> Goods received in inventory are recognized	Financial controller receives confirmations	Detective	Quarterly	E-mail confirmations	100%	99-90%	<90%	<i>The missing confirmation with volumes related to it should also be</i>

<b>external inventories received on time.</b>	and payables <i>(Recognition of the receipt of goods, services or raw materials; Inventories)</i>	completely, correctly and timely	from the internal and external inventories on the 4 <sup>th</sup> working day and compares the reported inventory level to the volumes in the stock accounting.							<i>identified</i>
<b># of deviations related to in-transit inventories</b>	Procurement, inventory management and payables <i>(Recognition of the receipt of goods, services or raw materials; Inventories)</i>	<b>B13</b> Goods received in inventory are recognized completely, correctly and timely	In transit inventories (purchases, stock transfers, sales) are monitored and checked at month end. The correctness of the information is checked according to the tasks and responsibilities of the Data Quality process. Significant discrepancies are recorded in the Deviations report.	Corrective	Monthly	Deviations reports in portal (/Group Accounting and Services / Deviations)	0	1	≥ 2	<i>Additionally a short verbal explanation of the causes leading to the deviation is given, as well as the party responsible for the deviation if needed</i>
<b>% difference between the hedged and the actual physical inventory position in 2 weeks</b>	Transactions with financial instruments <i>(Deciding on the transactions with derivative</i>	<b>F2</b> Regarding hedging with derivative financial instruments, the underlying exposures to be hedged are	Follow-up the actual physical inventory vs. the hedged inventory	Detective / Corrective	Ongoing	“Inventories to be hedged” excel-sheet	< 1%	1-3%	>3%	Separate indicator for different business areas.  In practice a graph were large differences are

<b>retrospect</b>	<i>financial instruments)</i>	identified and reported completely, correctly and timely.								highlighted and explained.  Additionally the average, st. deviation, max, min and range of the diff could be calculated
<b>Volume difference between the inventory position in Prima and the actual physical inventory reported in VAHA</b>	Transactions with financial instruments  <i>(Deciding on the transactions with derivative financial instruments)</i>	<b>F2</b> Regarding hedging with derivative financial instruments, the underlying exposures to be hedged are identified and reported completely, correctly and timely.	Follow-up the actual physical inventory in VAHA vs. the hedged inventory in Prima at month end	Detective / Corrective	Monthly	?	-	-	-	Needs further clarification from the process owners
<b># of discrepancies recorded in compliance monitor</b>	Transactions with financial instruments  <i>(Recording transactions into operative systems)</i>	<b>F6</b> derivative transactions are recorded completely, correctly and timely in the operative system designed for managing, reporting and invoicing purposes.  <b>F7</b> derivative transactions are recorded into correct books, including the correct	In Compliance Monitor all the necessary reconciliations are checked and documented. All major discrepancies from the standard process are recorded	Detective / Corrective	Monthly	Compliance monitor	-	-	-	The most important reconciliations related to KCRs F6 and F7 are picked up from the list and used as an indicator  Target levels and the key reconciliations need further clarification from the process owners

		assignment of the transaction as either hedging or as proprietary trading.								
<b># of discrepancies recorded in Transaction risk management control point 3 in Compliance monitor</b>	Transactions with financial instruments <i>(Deciding on the transactions with derivative financial instruments)</i>	<b>F2</b> Regarding hedging with derivative financial instruments, the underlying exposures to be hedged are identified and reported completely, correctly and timely.	Insert (manually) new trades / other information arising during the day	Detective	Monthly	Compliance monitor	0	1	≥2	<i>Indicator functions also as an process indicator – errors in the process, i.e. missing deals in Online system</i>
<b># of discrepancies recorded in Transaction risk management control point 4 in Compliance monitor</b>	Transactions with financial instruments <i>(Deciding on the transactions with derivative financial instruments)</i>	<b>F2</b> Regarding hedging with derivative financial instruments, the underlying exposures to be hedged are identified and reported completely, correctly and timely.	Insert (manually) new trades / other information arising during the day - rec Prima with Dated source excel	Detective	Monthly	Compliance monitor	0	1	≥2	<i>Indicator functions also as an process indicator – errors in recording the hedges</i>
<b>Closing check lists are up-to-date and filled in (Y/N)</b>	Reporting and Consolidation <i>(Posting of other journal entries to GL;</i>	<b>I8</b> Other journal entries are posted to GL completely, correctly and timely <b>I13</b> Recurring	List all recurring period-end posting and other mandatory and recurring period-end tasks (closing check	Preventive	Monthly	Closing Check list excel sheets in portal	100%	99%-95%	<95%	<i>Target levels need to be bind to the deadlines of each process (AP / AR / GL)</i>

	<i>Closing of the accounting periods)</i>	period-end postings (accruals, deferrals, provisions etc, as well as reversals of vouchers) are processed completely, correctly and timely. Only valid period-end postings are made.	list).  Person who implements the task fills in the closing check list when the related task is done.							
<b>% of eMemo vouchers approved on 5th wd</b>	Reporting and Consolidation  <i>(Posting of other journal entries to GL)</i>	<b>I9</b> Only valid and authorized manual journal entries are posted to GL. Adequate audit trail exists for all manual journal entries	GL vouchers are approved by controller (or other responsible person) in eMemo by the end of 5th wd	Detective	Monthly	eMemo Overall summary	>90%	90% - 75%	<75%	
<b>Total € difference in internal items against each counterparty</b>	Reporting and Consolidation  <i>(Closing of the accounting periods; Consolidation)</i>	<b>I14</b> Intercompany items are reconciled completely, correctly and timely in the period-end closing.  <b>I30</b> Group consolidation is performed completely, correctly and timely	Financial controller / Corporate accountant matches the internal sales by customer on the 6 <sup>th</sup> wd	Detective	Monthly	HFM matching report	≤50 000 €  OR  Unexplained differences > 200 keur	> 50 000 - 200 000€  OR  Unexplained differences >200 keur <1000 keur	> 200 000 €  OR  Unexplained differences >200 keur <1000 keur	<i>This KCI needs refining after the Internal Items project has identified / revised the key controls. The effects of the implementation of the new HFM needs to be taken into account.</i>  <i>Common indicator for Consolidation and Financial control processes</i>

		<i>(Intra-group transactions are eliminated correctly)</i>								<b>Future development</b>
<b>€ difference on Hyperion Check reports</b>	Reporting and Consolidation  <i>(Closing of the accounting periods)</i>	<b>I17</b> Period-end transfer of accounting data to the reporting system is complete, correct and timely	GL accountant confirms monthly check report in HFM on the 6th wd	Detective	Monthly	HFM monthly check report	0 €	> 0 - 100 000 €	> 100 000 €	<i>HFM check reports are easy to import into smart view excel.</i>  <i>This excel not in use for reporting at the moment – future development</i>
<b># of Audit Findings</b>	Reporting and Consolidation  <i>(Consolidation)</i>	<b>I33</b> Group-level annual and quarterly financial statements, including required notes and other disclosures, are prepared completely, correctly and timely.  <i>(The reporting instructions for monthly, quarterly and annual closings have been defined in the Controller's Manual. A closing and reporting calendar is also defined for each</i>	Audit findings are monitored and the necessary corrective action is carried out.	Corrective	Yearly	Documentation provided by external auditor	No high (red) audit findings	Yellow (medium) audit findings	?	<i>The same indicator gives also information on KCRs I29e and I30a</i>  <i>The development of Audit Findings more important aspect, how well the previous red of amber findings have been corrected into amber or green</i>

		<i>financial year and all relevant parties are informed about the closing schedules.)</i>								
<b>All necessary tasks done in time</b>	Reporting and Consolidation <i>(Consolidation)</i>	<p><b>I29</b> Complete, correct and valid data is entered for consolidation. Only authorized users have access to post consolidation journals / other manual entries.</p> <p><b>I30</b> Group consolidation is performed completely, correctly and timely</p> <p>A list of required consolidation journals for monthly, quarterly and annual closings is maintained to ensure that all required journals are made. A list of the key reconciliations to be performed has been documented in the closing</p>	<p>A person in CA updates the list and CA goes through the list in a team-meeting.</p> <p>A person in CA is responsible for updating a list of journals and the list is used as a checklist by CA each monthly closing</p>	Preventive	Monthly	N/A	100%	99%-95%	<95%	<p><i>There is a task list for consolidation but it is not that kind of which is checked when the task is done.</i></p> <p><b>Future development</b></p>

		checklist of CA.								
<b>€ amount of corrections made in HFM after the 6<sup>th</sup> working day</b>	Reporting and consolidation <i>(Management reporting and forecasting)</i>	<b>I25</b> Each legal company reports their forecasts for IFRS result, comparable operating profit, cash flows and return on capital completely, correctly and timely, according to the instructions defined in the Controller's manual.	Final figures should be ready and books closed at the end of the 6 <sup>th</sup> working day.	Corrective	Monthly	HFM / FiSe Process report	0 €	2 M €	4 M €	<i>Follow-up of the changes made which have an effect on EBIT, Group level monitoring</i>  <i>Upper or lower limit thresholds?</i>
<b>€ amount of corrections made on the period which are related to transactions from previous periods</b>	Reporting and consolidation <i>(Management reporting and forecasting)</i>	<b>I25</b> Each legal company reports their forecasts for IFRS result, comparable operating profit, cash flows and return on capital completely, correctly and timely, according to the instructions defined in the Controller's manual.	Final figures should be ready and books closed at the end of the 6 <sup>th</sup> working day.	Corrective	Monthly	N/A	0 M €	1 M €	2 M €	<i>Group level monitoring</i>  <i>Upper or lower limit thresholds?</i>  <i>Data for this indicator not available</i>  <b>Future Development</b>
<b>€ amount of unexplained difference</b>	Reporting and consolidation	<b>I27</b> There is follow-up of the forecasting	The difference between the estimate and the	Corrective	Monthly	Material provided by Business	<1 M €	2 M €	3 M €	<i>Upper or lower</i>

<b>between the estimate and the actual result</b>	<i>(Management reporting and forecasting)</i>	accuracy and deviations from the forecast are explained by the business management.	actual is analyzed and explained			Controller				<i>limit thresholds?</i>
<b>PROCESS INDICATORS</b>										
<b>Average of the monthly evaluations given by each process area on FiSe Process report</b>	Financial control by legal units  Inventories  Intercompany items	N/A	Monitor the deviations from expected behaviors and outcomes in processes relevant to financial reporting by giving an overall assessment of the process on a monthly basis	Corrective	Monthly	FiSe Process Report	None of any significance	Few of significance	Many of significance	<i>The process report is aggregated, first, on legal unit level for the parent and the biggest subsidiary, and second, for Inventories process at BU level, and lastly, for Intercompany items as a total</i>
<b>Overall assessment of the process during the period</b>	Transactions with financial instruments	N/A	Minimize deviations from expected behaviors and outcomes in processes by following up the overall performance of transactions with financial instruments	Corrective	Monthly or Quarterly	Self Assessment performed by Risk Analyst in Compliance monitor	None of any significance	Few of significance	Many of significance	<i>Separately for the two Business Areas</i>