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INTERPLAY BETWEEN TECHNICAL AND SOCIAL CONTROL
Internal control and SOX compliance at Nokia

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To my parents and children

ABSTRACT

There are high expectations for companies to act responsibly and provide transparent
and reliable information about their operations and financial status. Regulations such
as the Sarbanes–Oxley Act of 2002 (SOX) have put pressure on companies to
increase their technical controls and formalize their internal control and compliance
systems. At the same time, authorities are adding significantly more weight on
company ethics and the "tone set at the top" in determining whether a compliance
program is comprehensive and effective. For example, the most recent DOJ guidance
(U.S. Department of Justice Criminal Division 2019) on evaluating corporate
compliance programs does not recommend that companies adopt a specific set of
policies or procedures. Rather, it instructs prosecutors to assess whether a company
has "incorporated the culture of compliance into its day-to-day operations." This
study is about understanding the relationship between these written rules (i.e.,
technical control) and the culture of compliance (i.e., social control).

Technical controls constitute written rules and procedures, whereas social
controls are about the efforts to persuade people to adapt to certain values, norms,
and ideas about what is good and important in terms of work. Increased attention
toward this softer aspect of controls is because, in many accounting fraud scandals,
the issue has not been the lack of technical controls but the existence of toxic culture
and poor tone at the top. To meet the stakeholders' expectations of acting as
responsible corporate citizens, companies need both technical and social controls.
Despite this realization, the research around management control systems has still
been largely focused on technical control systems. Social controls have been studied
in the sociological literature, with only a few studies focusing on the relationship
between social and technical controls.

This study explores the different elements of control systems and their
interrelations in a rather unexplored context: focusing on the design and
implementation of an internal control system under a SOX compliance program. The
study seeks to understand what happens when an organization introduces new
technical controls as part of its SOX implementation project. More specifically, the
focus is on the relationship between technical and social controls. Furthermore, this
study seeks to differentiate between the control design, which is a management task,
and the control implementation, which is about how the controls are introduced to
and adopted by the employees. Empirical analysis is drawn from a case setting in

which Nokia, a Finnish-based public company subject to SOX legislation, has designed an internal control system and introduced it to its employees globally.

This study provides managerial and legislative implications and contributes to the literature on both management control and internal control systems. The management control literature has previously considered internal control as primarily related to controls that are in place to safeguard assets and ensure financial reporting quality. This study widens this traditional view and brings the definition of internal control closer to the concept of management control.

The key finding of this study is that the social controls can play a significant role in implementing technical controls. This study suggests that these two control types should not be considered as isolated in the control design process because their continuous interplay will affect how the controls are perceived and performed. It is a matter of how managers apply social control when designing and introducing technical controls. They must consider that employees do not always follow the controls as a result of rational decision-making; instead, employees' emotions affect how they decide to act. In this study, employees who had strong emotions toward the controls were also more likely to perform the controls. Thus, emotions are tied with employee perceptions of the controls. Even though today's technology provides endless possibilities for automated, system-based controls, a human factor will always be central in an effective internal control system.

KEYWORDS: internal control, management control systems, technical control, social control, SOX compliance, global companies, Nokia

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TIIVISTELMÄ

Yrityksiltä odotetaan vastuullisuutta, läpinäkyvyyttä ja luotettavaa raportointia toiminnastaan ja taloudellisesta asemastaan. Yhdysvalloissa vuonna 2002 säädetty Sarbanes–Oxley laki eli niin kutsuttu SOX-lainsäädäntö on lisännyt Yhdysvaltain pörssissä noteerattujen yritysten painetta kiinnittää huomiota sisäisen valvonnan järjestämiseen ja compliance-ohjelmien rakentamiseen. Usein tämä johtaa siihen, että, yrityksissä otetaan käyttöön helposti todennettavia kontrolleja, kuten ohjeita ja sääntöjä sekä henkilöstölle suunnattuja koulutusohjelmia. Samaan aikaan viranomaiset ovat lisänneet huomattavasti enemmän painoarvoa eettisesti kestävään yrityskulttuuriin ja johdon osoittamaan esimerkkiin, kun ne arvioivat, onko yrityksen compliance-ohjelma kattava ja tehokas. Esimerkiksi viimeisimmän Yhdysvaltain oikeusministeriön (Department of Justice, DOJ) asettaman compliance-ohjelmien arviointia koskevan ohjeistuksen mukaan ei ole suositeltavaa laatia ainoastaan toimintapolitiikkoja tai menettelytapoja. Sen sijaan DOJ kehottaa syyttäjiä arvioimaan, onko yritys "sisällyttänyt asianmukaisen toimintakulttuurin päivittäiseen toimintaansa". Tämän tutkimuksen ytimessä ovat näiden formaalien sääntöjen eli todennettavien kontrollien sekä yrityskulttuuriin pohjautuvien sosiaalisten kontrollien välisen vuorovaikutuksen ymmärtäminen.

Todennettava kontrolli muodostuu kirjallisista säännöistä ja menettelytavoista, kun taas sosiaalinen kontrolli tarkoittaa pyrkimystä saada ihmiset sisäistämään tietyt arvot, normit ja ajatukset siitä, mikä on hyvää ja tärkeää sekä yksittäisen työntekijän että organisaation edun kannalta. Lisääntynyt huomio tälle pehmeämmälle ohjaukselle johtuu siitä, että monissa yritysskandaaleissa kysymys ei ole ollut todennettavan kontrollin puutteesta, vaan myrkyllisen yrityskulttuurin erilaisista ilmentymistä. Yritykset tarvitsevat sekä todennettavaa että sosiaalista kontrollia pystyäkseen vastaamaan sidosryhmien odotuksiin toimia vastuullisina yrityskansalaisina. Tästä huolimatta johdon ohjausta koskeva tutkimus on edelleen keskittynyt suurelta osin todennettaviin ohjausjärjestelmiin. Sosiaalista kontrollia on tutkittu sosiologisessa kirjallisuudessa, ja vain harvat tutkimukset keskittyvät sosiaalisten ja todennettavien kontrollien väliseen suhteeseen.

Tässä tutkimuksessa tarkastellaan ohjausjärjestelmien eri elementtejä ja niiden välisiä suhteita melko tutkimattomassa yhteydessä: tutkimus keskittyy sisäisen valvonnan rakenteiden suunnitteluun ja toteuttamiseen SOX-compliance -ohjelman kontekstissa. Tutkimuksella pyritään ymmärtämään, mitä tapahtuu, kun organisaatio

ottaa käyttöön uusia todennettavia kontrolleja osana SOX-projektiaan. Tarkemmin sanottuna keskitytään todennettavien ja sosiaalisten kontrollien väliseen vuorovaikutukseen. Lisäksi tässä tutkimuksessa pyritään erottamaan sisäisen valvonnan suunnittelu, joka on johdon tehtävä, ja sisäisen valvonnan käytännön toteutus, mikä liittyy siihen, miten kontrollit esitellään organisaatiolle, ja miten työntekijät ovat lopulta valmiita noudattamaan niitä. Empiirinen analyysi perustuu tapaustutkimukseen, jossa Nokia Oyj, suomalainen SOX-lainsäädännön alainen julkinen yritys, on suunnitellut sisäisen valvonnan järjestelmän ja ottanut sen käyttöön maailmanlaajuisesti läpi organisaation.

Tutkimus kontribuoi johdon ohjausta ja sisäistä valvontaa koskevaan kirjallisuuteen. Aiempi kirjallisuus on liittänyt sisäisen valvonnan käsitteen vahvasti kirjanpidon luotettavuuden varmistamiseen ja yrityksen omaisuuden turvaamiseen. Tämä tutkimus laajentaa sisäisen valvonnan määritelmää ja tuo sen lähemmäksi johdon ohjauksen määritelmää.

Tämän tutkimuksen keskeinen löydös on, että sosiaalisella kontrollilla voi olla merkittävä rooli siinä, miten hyvin ja laajasti henkilöstö ottaa sisäisen valvonnan ohjeita ja sääntöjä käyttöön. Tutkimuksen tärkeimmät tulokset viittaavat siihen, että näitä kahta ohjaustyyppiä ei tulisi tarkastella erillään sisäisen valvonnan suunnitteluprosessissa, sillä niiden jatkuva vuorovaikutus vaikuttaa siihen, miten kontrolleihin suhtaudutaan ja miten ne lopulta suoritetaan – tai jätetään suorittamatta. Avainasemassa on se, miten esihenkilöt soveltavat sosiaalisia kontrolleja, kun he suunnittelevat ja panevat täytäntöön todennettavia kontrolleja. Heidän on otettava huomioon, että työntekijät eivät aina noudata kontrolleja järkevän päätöksenteon seurauksena; sen sijaan työntekijöiden käsitykset ja tunteet vaikuttavat siihen, miten he päättävät toimia. Tässä tutkimuksessa työntekijät, joilla oli voimakkaita tunteita kontrolleja kohtaan, myös suorittivat kontrolleja todennäköisemmin. Siten tunteet ovat sidoksissa siihen, miten työntekijät suhtautuvat kontrolleihin. Vaikka teknologia tarjoaa lähes rajattomat mahdollisuudet automatisoituun, järjestelmiin perustuvaan valvontaan, inhimillisen tekijän merkitys on aina keskeinen tehokkaan sisäisen valvonnan järjestämisessä.

ASIASANAT: sisäinen valvonta, johdon ohjausjärjestelmät, todennettava kontrolli, sosiaalinen kontrolli, SOX, globaalit yritykset, Nokia

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29.10.2020

Niina Ratsula

NIINA RATSULA
Niina Ratsula has worked over a decade in publicly listed corporations in global positions. She was part of the Global SOX Compliance team at Nokia and Director of Ethics and Compliance at Kemira. In 2018 she established her own professional services agency, Code of Conduct Company. Niina is a co-founder of the Nordic Business Ethics Network (nordicbusinessethics.com) and a known advocate for responsible business conduct in the Nordics.

Table of Contents

Tables

Figures

"You cannot regulate a corporate culture."
(Vice President, Sales Unit Finance and Control)

1 Introduction

1.1 Why study internal control?

A series of corporate scandals in the early 2000s triggered the passage of the Sarbanes–Oxley Act (SOX) in the U.S. to introduce significant reforms in the corporate governance, accounting, auditing, and reporting environment of publicly traded firms. Since then, companies have been faced with pressures to increase their technical controls and formalize their systems of internal control to satisfy these regulatory requirements. However, for many companies, these efforts have resulted in more inefficiencies in control systems, to the point where many organizations have withdrawn from the market (Tessier & Otley 2012b, 777). This has made the successful implementation of internal controls a primary concern for practitioners and regulators (March, Schulz and Zhou 2000).

SOX focuses on internal controls over financial reporting; these are typically *technical* controls such as rules, procedures, or standards describing how to perform and document certain tasks. SOX also mandates corporate management to assess the effectiveness of the internal control structure and report to the SEC[1] on any shortcomings in these controls. As SOX emphasizes the need for technical controls, many companies focus their efforts on creating a heavy regime of technical controls comprising policies, procedures, and system-based controls. Less attention is given to *social controls,* the manageable aspects of organizational culture (Malmi & Brown 2008; Merchant & Van der Stede 2007) that consist of efforts to persuade people to adapt to certain values, norms, and ideas about what is good and important in terms of work (Alvesson & Kärreman 2004, 426). Social controls appeal to employees'

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[1]   U.S. Securities and Exchange Commission

emotions (Ray 1986, 288), thus having an important role in engaging them to perform the technical controls. Many technical controls can be embedded in technology, yet we can never ignore the human factor needed to perform and understand the controls. With a modern definition, an effective system of internal controls comprises both technical and social controls (COSO 2013).

Though SOX emphasizes the role of technical controls, social controls have recently increased their importance in the eyes of the authorities when determining whether a compliance program is comprehensive and effective. For example, the most recent DOJ guidance (U.S. Department of Justice Criminal Division 2019) on evaluating corporate-compliance programs does not recommend that companies adopt a specific set of policies or procedures. Rather, it instructs prosecutors to assess whether a company has "incorporated the culture of compliance into its day-to-day operations." This recent emphasis is no wonder, as in many accounting fraud scandals, the root cause for failure has not been the lack of technical controls. Instead, poor tone-at-the-top and toxic corporate culture have been raised in many of these cases, such as at Toshiba, Enron, or Wells Fargo (Healy & Serafeim 2019; Verschoor 2015). Thus, to meet stakeholders' expectations of ethical and lawful behavior, companies indeed need both technical and social controls.

Many studies have recognized the importance of social controls over a firm's formal control system (Collier 2005; Kraus, Kennergren and von Unge 2017; Marginson 1999; Pierce & Sweeney 2005). However, research around management control systems has still been largely focused on technical control systems (Malmi & Brown 2008). Social controls have been studied in the sociological literature (e.g., Schein 1992), but only a few studies have focused on the relationship between social and technical controls (see, e.g., Alvesson & Kärreman 2004; Kraus et al. 2017), even though management control literature has recognized that the controls work interactively and in concert, comprising sociotechnical artifacts (Berry, Coad, Harris, Otley and Stringer 2009). Thus, the focus should not be on whether any particular controls are used but on how they are used (Simons 1995) and how they interact with other controls (Grabner & Moers 2013; Malmi & Brown 2008; Mundy 2010).

Merchant and Van der Stede (2007) suggest that different control elements should be combined to ensure better control because they *complement* each other. In addition, it should be considered how these different control elements *affect* each other. Many studies around control systems in global companies primarily treat the control elements as separate tools that can substitute for each other (Chang & Taylor 1999; Chung, Gibbons and Schoch 2000), even if their possible interactions are noticed (O'Donnell 2000). As Moilanen (2012, 136) suggests, "This view may consider that the tools together create certain effects but does not empirically acknowledge the possible effects of control systems or elements on each other."

Therefore, although different management control system elements are interdependent, their relationships are still largely unexplored (Chenhall 2003; Malmi & Brown 2008; Otley 2008). Much of the management control research is focused on single themes or certain forms of control that are not connected to other forms of control or to the context in which they operate. Thus, there is a risk of arriving at erroneous conclusions because the different forms of control do not operate in isolation (Alvesson & Kärreman 2004; Chenhall 2003, 131; Fisher 1998).

Legislations such as SOX have pressured organizations to adopt more technical controls – usually at the expense of social controls. Evidence exists that changes in control style from informal to formal can lead to dysfunctional behavior and distrust in the management (Johansson & Baldvinsdottir 2003). Scapens (2006) suggests that if the control system is initially more open to design and creation (meaning that it has the dominant features of social controls over technical controls), it will later be more or less taken for granted among the many users, and therefore, it will become more difficult to change. This may explain why many organizations have failed in their technical control implementation projects. When employees are used to operating in an environment based on empowerment and social control, they may interpret the change toward tighter controls as a lack of trust. This may result in decreased motivation and change resistance.

Instead, why not turn this question around: Could strong social control be utilized as an asset by management who wants to implement a new set of technical controls? Could a strong culture in fact facilitate (instead of hinder) the adoption of these new technical controls? Forms of social control, such as the tone at the top, social arrangements, and group pressure (Merchant & Van der Stede 2016, 90) are used to creating cultural norms that govern employee behavior. Could we use the power of these cultural norms to engage employees to adopt new technical controls?

We already have some answers for the above question. For example, Kraus et al. (2017) found that managers were able to avoid resistance toward the implementation of formal controls by using "ideological talk" as a form of social control: through the interplay with the predominant ideological control in place, the formal management control system became vested with symbolic significance. Furthermore, Alvesson and Kärreman (2004, 441) discovered that socio-ideological control is intimately tied to bureaucracy and output control. According to them, it is not an alternative to the latter two, as claimed by most of the literature on control (e.g., Ouchi 1979, 1980), nor is it useful only in situations where complexity and uncertainty make rules prescribing behavior and the precise measurement of results impossible.

This study aims to shed more light on the issues just discussed in a rather unexplored context: How can organizations apply technical and social controls when designing and implementing a system of internal control in the context of a SOX

program? This is a question of how to balance between social and technical controls and how these two types of controls interrelate. Besides choosing the types of controls to be used, management also has several other aspects to further consider when designing a new system of internal control: How should control objectives be designed? How should the controls be used to search for the desired result? How should the controls be presented to the employees? On the other hand, employees subject to follow the presented controls may perceive the controls in different ways despite managerial intentions: they can see the controls either as adding value to their work or as an additional burden. As a result, they may choose to follow the controls or ignore them.

Tessier and Otley (2012a, 182) developed a framework that accounts for all of these various aspects of control design and implementation. They suggest that more research should be conducted to understand what affects employee perceptions of controls and how these perceptions may impact organizational performance. Adler and Borys (1996) also called for studies to focus on the variability in how controls are perceived.

But why study internal control? And how do internal controls differ from other control concepts? Internal controls are broadly defined as a process for assuring achievement of an organization's objectives in three key areas: operational effectiveness and efficiency, reliable financial and non-financial reporting, and compliance with laws, regulations, and internal policies (COSO 2013). Management controls generally focus on implementing organizational goals as defined by the management, whereas internal controls aim to ensure data quality for management decision-making, mitigate the risks involved in achieving the organization's objectives, and ensure compliance. Effective internal control also provides confidence in the information reported by the management to investors and other stakeholders (Frankel, Kothari and Zuo 2019).

We have a growing body of existing research around internal control, yet many researchers suggest that it still remains relatively unexplored (see, e.g., Arwinge 2010, 2014; Barra 2010; Liu 2005; Maijoor 2000). Furthermore, the current research is fragmented, and most recent studies focus only on relatively narrow segments of internal control, such as the control environment, fraud, or internal control evaluation and reporting (see, e.g., Barra 2010; Caplan 1999; D'Aquila 1998; Krishnan & Visvanathan 2007; Maijoor 2000). The establishment of SOX has increased interest in the topic of internal control. However, the vast majority of internal control– and SOX-related studies is largely descriptive; when considering the existing research from a methodological perspective, it is fair to say that it relies on rather generic or

publicly available data, such as the CRSP[2] database, public company disclosures on internal control deficiencies, annual reports, or large survey questionnaires completed by corporate CFOs. SOX emphasizes the external reporting of internal control effectiveness; consequently, the research mainly deals with the external implications of SOX, neglecting the social controls enacted by inside organizations.

One reason for this fragmented and narrow character of the existing literature might be the fact that the definition of internal control is not yet clear because the term *internal control* covers vastly different concepts in the sub-area of accounting research (Maijoor 2000, 102). Traditionally, in the professional accounting literature, internal controls have been associated with accounting controls such as the segregation of duties, authorization policies, organization structure and measures to protect assets and information. The definition of internal control is much more complex, dynamic, and constantly evolving in more recent literature, including in a variety of interpretations and philosophies (e.g., Arwinge 2010; COSO 2013; Kinney 2000; Maijoor 2000). In fact, according to a modern view, a significant amount of organizational activity can be considered to fall under the concept of internal control (Maijoor 2000).

Selto and Widener (2004) assessed and interpreted correspondence (or lack thereof) between published research topics and topics of the practice literature in the management accounting area. The objective of their study was to use observed divergences between management accounting research topics and issues of practice to identify interesting, practice-oriented research questions. Their results classify internal controls as an area where practice literature exceeds research. This supports the idea that there is both a need and room for new research opportunities in the area of internal control. Humphrey (2007, 171) argues that little is known about auditing in "practical settings," which typically involves the assessment of companies' internal control over financial reporting; therefore, it can also be concluded that little is known about internal control in practical settings, so additional studies on the details of the workings of internal control seem important.

1.2 Objective of this study

This study will explore the different elements of control systems and their interrelations in a rather unexplored context – the design and implementation of an internal control system. This study seeks to understand what happens when an organization introduces new technical controls as part of its SOX compliance project. More specifically, the focus is on the relationship between technical and

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[2]   Center for Research in Security Prices

social controls. In the scope of its analysis, this study includes a variety of different control elements and their interrelations (Chenhall 2003; Malmi & Brown 2008) instead of focusing only on certain types of controls. Furthermore, it seeks to differentiate between the control design, which is a management task, and the control implementation, which is about how the controls are introduced to and adopted by the employees.

Selecting *internal control* as a unit of analysis provides a new angle to study control systems. Typically, studies on the implementation of control systems have focused on certain management accounting technologies, such as activity-based costing systems or balanced scorecards. Management control systems are also usually studied in the context of voluntary adoption, whereas this study will look at a SOX compliance project in which the requirement to establish the internal control system results from a regulatory compliance requirement. This might provide some interesting insights into the impacts that regulation can have on the development of control systems.

This study's objective is twofold and can be scrutinized through the following questions:

RQ1   How do social and technical control interplay in the design and implementation of an internal control system?

RQ2   How does the presentation of internal controls impact employee perceptions and performance of internal controls?

The first question concerns the actions taken by management regarding control system design and presentation, in which the interaction between technical and social controls plays a key role. The second question is about how the controls are perceived by employees, which ultimately impacts the implementation's success. The important difference between these two questions is that the employee perceptions are outside the management's influence, i.e., management may use various techniques to persuade employees to behave a certain way but can never have complete control over how they feel and behave based on those emotions. Separating the managers' intention and employees' perceptions allows us to emphasize that both groups' views of controls might deviate from each other.

The management control literature shows that internal control differs from management control because it is not, in itself, about management decisions. Instead, internal controls are fundamental to ensuring the integrity of data used in any control system; they consist of systems that safeguard assets from theft or accidental loss and ensure reliable accounting records and financial information systems (Simons 1995, 181). The practical frameworks even consider internal control in much broader

terms: COSO (2013) defines internal control as a process designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance. This process consists of ongoing tasks and activities, including not only technical controls, such as establishment of policies, procedures, structures, reporting lines, and approval rights, but also social controls, such as tone from the top, communications, job design, and management commitment to integrity and ethical values. COSO underlines that internal control is not merely about policy and procedure manuals, systems, and forms but also about people and the actions they take at every level of an organization to affect different elements of internal control.

This study's empirical analysis is drawn from a case setting in which a global company (Nokia) subject to SOX legislation has designed an internal control system and introduced it to its employees globally. The research questions are addressed through the recent study around internal control and management control systems. A framework developed by Tessier and Otley (2012a) is used to explain the case study findings. This framework is a revised version of the Simons' (1995) Levers of Control (LOC) framework, which has been used frequently in the literature over the years.[3] It has many strengths, including different types of controls and providing a broad perspective (Ferreira & Otley 2009). However, as Tessier and Otley argued (2012a, 172), its main weakness is the definitions of its concepts, which are too vague and sometimes ambiguous. A framework for the design and implementation of an internal control system is presented to conclude the empirical analysis of this study. This framework adds internal control theory elements to the framework developed by Tessier and Otley (2012a) and refines it further.

This study considers the different control types holistically and analyzes the empirics through the current management control and internal control literature. When analyzing the use of social controls in this study, Merchant and Van der Stede's (2016) definitions of personnel and cultural control are used; these include typical elements of social control, such as tone at the top, employee selection and job design, group rewards, informal communication, and social arrangements. Technical controls are defined here as those that are based on procedures, policies, rules, and standards that specify how tasks are to be performed and how individuals and groups are organized (Malmi & Brown 2008; Tessier & Otley 2012a; Simons 1995). Technical controls are embedded in the technology of work, and they govern day-to-day activities. These are the more visible, objective components of the control system and are, thus, the easiest to research. Within the context of the case analysis,

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[3]   Simons' framework has been cited 1168 times in the literature according to Scopus (2019) findings and 4151 times according to the search findings of Google Scholar (2019).

the technical controls that are identified as part of the internal control system at Nokia are within the scope of this study. Furthermore, the social controls at Nokia are limited to covering only the aspects of introducing the technical controls relevant here. Thus, social control *per se* is not in the interest of this study.

This is one of the first studies to discuss the detailed components and aspects of internal control and how they are interrelated (see Rae & Subramaniam 2008; Jokipii 2010). It will contribute to the understanding of the nature of management accounting and internal control and the interdependencies between social and technical control by studying control practices at various levels within the organization (Alvesson & Kärreman 2004).

A clear motivation exists for adopting a holistic perspective on management control: empirical management control studies have produced ambiguous findings and conflicting results because too few components have been studied compared to more comprehensive and integrative approaches (e.g., Chenhall 2003; Ferreira & Otley 2009; Otley 1999). Arwinge (2010, 188) suggested that more research is needed to increase our understanding of how firms design and manage their internal control systems. Berry et al. (2009) have called for further research on the interplay between the rational design of management control systems and socially constructed realities. To build on these two gaps, this study finds it important to learn not only how to design an internal control system but also to understand how those controls are perceived by an organization's employees. In a project such as SOX, there is always a chance that the controls are formally introduced "by the book," but they fail to become embedded and robust in the day-to-day operations. As many recent corporate scandals have taught us, a technically qualified control system can be overridden by poor tone at the top and toxic culture, leading to significant compliance failures. Thus, it is necessary to include social control elements in the scope of this study.

This study contributes to the literature on both management control and internal control systems, bringing these two concepts closer together; it will include both technical and social controls by utilizing the Tessier and Otley (2012a) framework to guide and frame the empirical analysis. It will also help us gain a better understanding of how the control system functions as a whole and how the different elements of control interact by looking at the internal controls system holistically instead of circumscribing only certain aspects of control. Furthermore, this study will propose some refinements to the Tessier and Otley (2012a) framework to demonstrate how it can be applied in the context of internal control design and implementation. There will be useful insights from the managerial implication perspective for companies in the process of implementing systems of internal control, as increasingly demanded by the regulatory environment. Furthermore, it will provide some reflections from the legislative implication perspective as well.

1.3 Research setting

This study occurs in a setting in which Global Company (Nokia) is required to design and implement an enhanced internal control system following the enactment of Sarbanes-Oxley legislation (SOX). SOX was enforced in 2002 after some substantial financial scandals like the case of the Enron corporation, introducing major changes to the regulation of financial practice and corporate governance on public companies listed on the New York stock exchange. SOX addresses the duties of the CEO, CFO, and auditors and makes management personally responsible for ensuring the credibility of the financial reporting to its stakeholders. Misleading information, when and if discovered, carries stiff penalties for the CEO, CFO, and auditors.

The mandatory internal control assessment and public reporting imposed by SOX aims to improve the effectiveness of controls over financial reporting, hold corporate management more accountable for designing and maintaining effective controls, and make it easier for prosecutors to establish management's knowledge and intent in case of alleged fraud (Shapiro & Matson 2008, 224). SOX is just one example of the increased self-reporting requirements that corporations are facing today regarding corporate governance and sustainable business. For example, the EU Non-Financial Reporting Directive and The Modern Slavery Act also require companies to report on their compliance and corporate responsibility efforts.

Healy and Serafeim (2016) used Transparency International's ratings of self-reported anticorruption efforts for 480 corporations to analyze factors underlying the ratings. They concluded that, on average, firms' self-reported anticorruption efforts signal real efforts to combat corruption and are not merely cheap talk. This provides encouraging evidence that companies are walking the talk in compliance matters. However, whether an organization can really gain benefits from legislative requirements such as SOX is dependent on the way its SOX controls are designed and implemented. We have examples of companies such as Bear Stearns, Lehman Brothers or Washington Mutual, which have all been SOX compliant but have yet failed. These scandals have proven that the consequences can be severe if the compliance is only ostensible. The root cause of many scandals like Enron and Lehman Brothers has not been the lack of technical controls but, rather, a toxic corporate culture and poor tone at the top.

As such, an organization may reach formal compliance "on paper" by introducing a set of technical controls that are formally tested and provide the basis for management to externally report on the internal control's effectiveness. This study aims to learn how these technical controls are actually perceived and followed by the employees and what role the social controls play in the formal SOX compliance. The important question is how to successfully implement a SOX compliance program?

This study assumes that a successful implementation is about designing and implementing controls that serve a business purpose while simultaneously providing assurance for legal compliance. Furthermore, it is not enough that a company designs a comprehensive system of internal control that looks good on paper; it must also sell the idea of the controls to its employees. We must recognize that employees do not always perceive nor follow the controls as management intended, and employees must be motivated to perform the controls to accomplish a successful implementation of controls. Otherwise, we might be left with only an illusion of control. This leads into the point where we must understand employee attitudes. Employee perceptions of controls will determine their attitudes toward controls. The employees' individual attributes, such as the socio-cultural environment in which they evolve and the level of knowledge they have regarding controls, play a role in their perceptions (Berlo 1960).

This study examines how a system of internal control is designed and implemented in a SOX implementation context. Nokia uses a global approach to align local practices with the global policies and procedures to ensure SOX compliance throughout the organization. Utilization of the organizational capabilities worldwide is an important source of competitive advantage for Nokia (Ghoshal & Bartlett 1988; Grant 1996; Kogut 1991). Thus, it will attempt to leverage these practices worldwide.

As part of its SOX compliance program, Nokia identified a new set of technical controls to be implemented throughout the organization. These controls covered the key end-to-end processes which had the most impact on the financial reporting. Prior to SOX, the company did not have a stringent set of technical controls, but the control environment was characterized by very strong social controls in which individuals were empowered to make decisions and spend company money without a heavy control regime. Those social controls, which appeal to the emotional elements within employees (Ray 1986, 288), comprise core values, beliefs, norms (Alvesson & Kärreman 2004; Simons 1995) and symbols (Malmi & Brown 2008; Schein 1992). Social control is not always consciously designed, as it often derives from, or is an artifact of, the organizational culture. One of its top financial executives described the company culture as follows:

> "Our culture originally was very much of trust, and it was very much based on trust in individuals to do the right decisions, and trust in individuals to do the right thing... and, you could say it was very much around empowerment." (A Vice President of Finance and Control)

The social form of control is based on the assumption that individuals do what is best for the organization either because they are self-directed or because they are influenced by social pressure. Technical controls, on the other hand, specify how tasks are to be performed (Perrow 1986) and how individuals and groups are organized (Malmi & Brown 2008). They are based on rules, procedures and standards that govern day-to-day activities. Once SOX was enacted, the social controls were to be complemented and partly replaced by the technical controls. This meant, for example, introducing a broad variety of new written policies and rules, approval flows and documentation requirements. As a practical example: before SOX, marketing managers would typically have a budget under which they could operate without heavy documentation authorizing the transactions. In practice they could call to a supplier and order a marketing campaign, as long as it was within the approved budget. After SOX, they could no longer manage the purchasing decisions on their own but must contact the sourcing organization to negotiate the deal. All phases of the transaction had to become traceable, meaning, for example, that the transactions would must have purchase requests, written approvals and written purchase orders to be delivered to the supplier.

> "…What changed after SOX? Well, if we look at spending, I think nobody would ever buy 800 000 Singapore dollars worth of advertising using an SMS any more…" (Director, Treasury Finance & Control)

Global implementation projects can easily result in a tension between the need for global integration, on the one hand, and local adaptation, on the other hand (Kostova & Roth 2002; Rosenzweig & Singh 1991). Thus, it is not enough simply just to enforce a set of technical controls; managers must also consider how to introduce the controls, how employees might perceive the controls and how to manage the potential change resistance. The social controls are trying to impact the emotional aspect of individuals, and the perception of the controls is about how employees feel about them. Hence, to understand the phenomena relevant for this study, we must understand the interaction that occurs between technical and social control elements.

1.4 Methodological considerations and case company introduction

1.4.1 Case study approach in this research

Internal control is operationalized in complex, dynamic organizations that differ substantially across time, across organizations, and across cultures. Due to this

inherent complexity, it is difficult to capture measures of internal control process quality in an experiment, an archival study, or even a survey (Arwinge 2010; Kinney 2000, 88). Rae and Subramaniam (2008) have suggested that researchers should find better and more holistic measurements of internal control rather than relying on one single source such as the perceptions of internal control quality according, for example, to the financial controller. Furthermore, Cruz, Major and Scapens (2009, 91) have suggested that more qualitative studies should be conducted on the adoption of externally imposed practices in global/local settings. This research is about internal control and about the interplay between different types of control: a field-based case research is considered the most suitable method to study such complex phenomenon.

A case study can be characterized as a research strategy that focuses on understanding the dynamics present within a single setting (Eisenhardt 1989, 534), and it has been suggested (Arwinge 2010) as a useful research method in the area of internal controls, because it can help to gain a deeper understanding of how managers, directors and other specialists are working with internal control in their day-to-day activities. To date, however, only a few in-depth case studies have been conducted to study internal control (Arwinge 2014; Pfister 2009). This might be partly because internal control is considered as a rather sensitive topic, so researchers face challenges in accessing qualified research data.

The case study method allows the researcher to study complexity and the special characteristics of certain phenomena in detail and is particularly useful when the phenomenon under investigation is difficult to study outside its natural setting. Selecting only one case company means it is possible to get into very detailed information, which is essential to rich field studies (Ahrens & Dent 1998, 25). Researchers will benefit from obtaining information and views from a wide range of organizational members. Using only one case company means it is also possible to accomplish the interpretive research aims of the study.

As a response to Zimmerman's (2001) view that nothing has or can be learned from field research, Ittner and Larcker (2002, 788) note that it is difficult to imagine how research in an applied discipline such as managerial accounting could evolve without the benefit of detailed examination of actual practices. According to Ittner and Larcker (2002, 789), "field-based research is not simply an ill-defined and non-scholarly method for conducting practitioner-oriented studies of consultant behavior. Rather, when done correctly, field-based research may be the only way to truly understand the antecedents and consequences of managerial accounting practices." Since Ittner and Larcker's argument, field studies have reserved their place as a useful strategy to study managerial accounting practices.

SOX legislation is a U.S.-based phenomenon, so it is not surprising that the majority of the SOX-related studies are U.S. based. Thus, all of the prior SOX-

related studies have been mainly following the mainstream paradigmatic choices (see, e.g., Chan, Kleinman and Lee 2009; Hammersley, Myers and Shakespeare 2008; Huang 2009; Vakkur, McAfee and Kipperman 2010). In practice the studies have been performed with quantitative methodological choices, e.g., by sending out surveys to corporate executives or analyzing publicly available data, such as internal control statements within the published annual reports. Much research also utilizes different databases, such as Compustat and AuditAnalystics (e.g., Huang 2009). A few suggestions regarding the weaknesses of the prior research can be made to justify the selection of an interpretive approach in this study.

First, when trying to gain an understanding of the functioning of organizations' internal control systems, the survey filled out by corporate executives may not provide enough reliable data to capture the intended phenomenon. A survey might be a suitable method to compare different characteristics of companies under SOX and find some correlations. However, the objectives of this study are likely to be achieved via alternative methods. Typically, the qualitative research is suggested to be the most suitable method to understand questions related to *why* and *how*, which are at the core of this study.

Second, information about internal control design, use and outcomes has not been generally available to company outsiders (Krishnan 2005, 650). It is very likely that we only touch the tip of the iceberg when we use only the information available in annual reports or different databases as the research data. Statements about whether there are material weaknesses in corporations' internal control systems do not address the question of how an organization has designed and implemented its internal control system or how employees have perceived the controls. Additionally, the threshold for reporting such material weaknesses is very high, so even without reporting any weaknesses, very interesting issues might still be happening inside the organization that are not visible to the outsiders. We have multiple examples of companies (Ericsson, Volkswagen, Wells Fargo) who have externally reported SOX compliance or appealing CSR[4] reports but yet have failed in their ethics and compliance programs. Issues in the control environment and lack of an ethical culture seem to be related to many fraud and corruption situations.

Several accounting fraud cases suggest that leadership has a strong impact on unethical financial reporting (see, e.g., Mihajlov & Miller 2012; Tourish & Vatcha 2005). An in-depth case study is indeed required to understand the leadership implications, which is at the core of social control.

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[4] Corporate Social Responsibility (CSR) report is a periodical (usually annual) report published by companies with the goal of sharing their corporate social responsibility actions and results.

We must apply interpretive study methods that rely on the assumption that meanings are constructed by human beings as they engage with the world and that they are interpreting in order to understand the complex interrelations between different types of controls within an organization and what is really occurring *inside* the organization. The interpretively oriented researchers often emphasize the value of storytelling as a natural way of communicating rich meaning structures and, therefore, they value detailed narratives over general and abstract models (Kakkuri-Knuuttila, Lukka and Kuorikoski 2008, 277). In practice this means that there must be multiple sources gathering the research data; interviewing different stakeholders in different levels of the organizational hierarchy, studying the archival data of project documents and flowcharts and also gathering data through unofficial "coffee break" conversations.

The researcher in this study was an employee of the case company at the time when gathering the data and her responsibilities were closely related to the examined phenomenon. Thus, some characters of an interventionist research can be identified in this study setting. Jönsson and Lukka (2007, 374) define interventionist research as a kind of field experimentation in which the researcher, not having complete control over the design of the experiment, seeks to determine the experimental situation through observation, acts on that situation in concert with the host organization, observes process and outcome, and analyzes findings in view of the relevant literature.

The researcher's role in the case organization was to coordinate several activities aiming to ensure Nokia's compliance with SOX legislation and internal control requirements. She was an active actor in the real-time flow of life in the field, and she was bound to adopt, or at least consider, the *emic* perspective to the issue at hand (cf. Jönsson & Lukka 2007, 374). Such a perspective means to become an "insider" in the sense that the researcher is seen as a competent and trustworthy member of the world where she is doing the fieldwork. This not only enables her to understand the meanings and actions of the actors in the field, but it also enables her to communicate and act together with them (Jönsson & Lukka 2007, 374.) Being one of the "insiders," it was rather easy to gain the access to records, people and processes. Furthermore, it enabled the researcher to establish a relaxed, open atmosphere during the interviews, also allowing the difficult and sensitive topics to emerge. However, despite the interventionist characters acknowledged in the research setting, the approach also included an *ex post facto* type of research in which the researcher examined what, how, and why something occurred in the past (cf. Jönsson & Lukka 2007, 375).

1.4.2   Case selection and introduction of Nokia

Selecting the object for a case study must be consistent with the research problem, and the case must correspond to the study's theoretical framework and variables (Ghauri 2004, 112). In light of the established research setting, the potential case company had to fulfill the following criteria:

1. The company had to be listed on the New York Stock Exchange (NYSE) and thus be obligated to comply with Sarbanes-Oxley legislation.

2. The company had to still employ most of the people (or access to relevant ex-employees should be available) who had been involved in the SOX implementation to assure the gathering of qualified data related to the phenomenon subject to this research.

These criteria were in place in the company where the researcher was employed. Thus, for the researcher it was a natural solution to suggest the case study for her employer in 2007. In fact, as Nokia was the only Finnish-based company left on the NYSE in 2007, it was, in fact, also the only possible selection for the researcher. The research access was negotiated with the Senior Vice President, Group Controller in 2007. The manuscript of the research was finalized in February 2020, after which it was provided to Nokia for review and final approval.

Nokia is a large multinational company headquartered in Finland. At the time of selection as the case company for this research, the company was one of the largest worldwide vendor of mobile phones and smartphones, with over 130.000 employees in 120 countries, sales in more than 150 countries and global annual revenues of EUR 39 billion (as of 2011). The company had sites for research and development, manufacturing and sales throughout the world. After a partnership with Microsoft and subsequent market struggles, its mobile phone business was bought by Microsoft in 2014. After the sale, Nokia began to focus more extensively on its telecommunications infrastructure business and on Internet of things technologies. The company then also experimented with virtual reality and digital health. The Nokia brand has since returned to the mobile and smartphone market through a licensing arrangement with HMD Global. Nokia continues to be a major patent licensor for most large mobile phone vendors. As of 2018, Nokia is the world's third-largest network equipment manufacturer.

Nokia is listed on the NYSE and thus had gone through a SOX-implementation program that started in 2005. The first year to be compliant with SOX was the fiscal year 2006. Thus, the company filed its first 20-F[5] form statement on internal control

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[5]   The 20-F is a form filed by a company with the SEC which is completed and submitted by foreign companies which have shares traded on a US exchange.

in 2007. During the time of empirical data gathering (2007-2012), most of the key persons who had been involved in the implementation project since the beginning were still working for the company, thus they had the knowledge of the events during the whole period of implementation. This enabled interviewing the people who had the most relevant information about the research phenomenon.

Being a multinational company with over 130.000 employees globally, it was possible to study the phenomenon from many different viewpoints of the organization and its inter-organizational setting, also taking into consideration the potential cultural differences between different local entities.

The researcher herself was employed by the case company in a global position during the whole period of empirical data gathering (with the exception of the two last interviews); thus, there were no issues about gaining access. The empirical case study began with a pilot discussion between the researcher and a representative from the case company who was nominated as the researcher's coach during the research process. The coach had been the program manager for the SOX implementation project and thus was the most crucial informant in identifying the relevant objects of the research data. Following the process of the data gathering and analyses, the researcher and coach held several discussions to ensure the research data's adequacy and sufficiency. The following table summarizes the significant events in the case company concerning the researched phenomenon and the timing of the research field work.

Table 1. Fieldwork and the significant SOX-related events in Nokia

2002	*2003-2004*	*2005*	*2006*	*2007*	*2008-2012*
SOX legislation was established	SOX activities were initiated by the Accounting function (FSP), but no group level SOX program existed	Nokia established its group-level SOX implementation program, overseen by the top financial management	1st year under SOX regulation at Nokia	Nokia filed the first 20-F form according to SOX SOX implementation program ended, and new internal control governance model was established	Internal control governance model was functioning as part of daily processes

Field work and data gathering

The fieldwork started when the researcher was employed by the case company in August 2007. She held several different specialist and managerial roles in the area of internal controls and financial control during her employment with the company.

The researcher actively participated in the implementation and development work of SOX compliance and internal control during 2007-2009, but after that she held a position in the Finance & Control organization, which was less involved in the operational level of the research area until the end of year 2011, when she departed the company. Due to the strong involvement in the researched phenomenon, the researcher constantly was conscious of her role in the field and also documented it clearly in the research papers. She recorded 43 out of the 45 interviews during her employment period. The last two interviews occurred in early 2012, when the researcher was no longer employed by the company[6].

1.4.3 Empirical data gathering

Empirical evidence in qualitative case studies may derive from documentation, archival records, interviews, direct observations, participant observations, and physical artifacts (Eisenhardt 1989, 534; Yin 2009, 100). As an internal employee, the researcher had wide access to internal *data repositories* such as financial process related tools and systems, archives, the Intranet, project materials and concept documents. She was also able to utilize the company Intranet phone book and the help of colleagues to identify potential informants and data sources. The data repositories were used to strengthen the researcher's own understanding of the research phenomenon and to verify and compare the information received through interviews (c.f. Ghauri & Grønhaug 2002, 115-116).

Interviews are one of the most important methods of generating empirical evidence in the case study context, and they were also selected in this study as the primary data gathering method. Interviewing about past events gives a researcher insight into how these events and their contexts were experienced. The insiders' perceptions can also be employed in explaining real processes. (Soulsby & Clark 2011.)

It is important to identify the relevant people to be interviewed to gain relevant and reliable data (Daniels & Cannice 2004, 193; Ghauri & Grønhaug 2002, 176; Rowley 2002, 19). The interviewee should have sufficient knowledge of the issue under question. It was also worth learning whether the person held a position relevant in this study at the time of the events under study. All interviewees were carefully selected based on their expertise in the subject matter and current or past position in the organization. The aim was to gather representatives of both managers and employees to be interviewed to acquire insights not only on the control design and managerial intentions but also on how employees perceived the controls. In addition,

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[6]   These interviews had been scheduled prior to her leaving the company.

one group of the interviewees represented the "SOX community", i.e. employees who worked full-time in the SOX compliance program core team.

The interviewees were selected in order to reach a wide cross-sectional sample of actors. The strategy behind the choice of interviewees was to select key informants across the organization, as described above. All interviewees were interviewed once, but the SOX program manager was interviewed twice. This was necessary as he was a key informant in the SOX program. After conducting 45 interviews, similar themes began to appear in the discussions, and thus, the researcher concluded that there were enough data. The reason for conducting the two last interviews only after the researcher had left the company was purely technical. Those two interviewees had been identified as key informants, but due to conflicting schedules, there was no time to conduct the interviews prior to leaving the company. The researcher's access to the case company remained open even after her departure. However, conducting further interviews was not considered to enhance the saturation at that point.

By the time of the first interview, the researcher had already been working in the company for 18 months, which helped to identify the best informants. Suggestions for further potential interviewees were also asked in the course of each individual interview. The resulting suggestions in most cases were the same persons whom the researcher had already identified herself. This affirmed the researcher's confidence that the relevant interviewees had been selected.

The interview procedures were standardized and included the steps illustrated in table 2.

Table 2.   Steps taken for conducting interviews

STEP 1	Sending request by e-mail or orally asking for an interview
STEP 2	Setting an appointment
STEP 3	Sending interview guidance in advance
STEP 4	Conducting and recording the interview (in person or via conference call)
STEP 5	Transcribing interviews
STEP 6	Analyzing transcripts

Altogether 45 semi-structured interviews were conducted at different organizational hierarchy levels and functions during the years 2009-2012 (see Appendix 2 for the detailed list). All interviews were recorded and transcribed into written form. The group of interviewees consisted of personnel from all levels of the organization, which was considered vital to gain a comprehensive understanding of the research phenomenon. Interviewees can be divided roughly into three groups:

1. *SOX community*, consisting of key persons involved in the process of designing the controls and running the SOX compliance program. This group included members of the Internal Controls and Internal Audit team, the SOX Program lead, SOX Coordinators and External Audit Partner. The people in this group had been daily involved with internal controls and internal audit-related work, including also leading the SOX implementation project. This group of employees consisted the best informants to gain detailed information about the SOX implementation project and the level of controls prior SOX. Thus, they form the majority of the interviewees.

2. *Managers*, including representatives of senior financial management, such as the CFO, Corporate Controller and Vice Presidents within the Finance & Control Community. This group also included the financial heads for different organizational units or locations and team leaders, e.g. in purchasing and accounting departments. These interviewees were in a key role in ensuring SOX compliance and control implementations in subunits. The key focus in interviews with this group was to understand how the controls were introduced to employees and how the leaders had experienced the SOX program.

3. *Employees* across the different organizational units and local entities. This group was selected to gain data specifically for the second research question (employee perceptions and performance of the controls). It comprised controllers, accountants, concept owners, buyers and sourcing coordinators. The key focus in interviews with this group was to understand how the employees perceived the controls.

The following table summarizes the number and length of the interviews for each of the interviewee group.

Table 3.   Summary of the interviews

INTERVIEWEE GROUP	NUMBER OF THE INTERVIEWS	TOTAL LENGTH OF THE INTERVIEWS / MIN	AVERAGE LENGTH OF ONE INTERVIEW / MIN
SOX COMMUNITY	20	1303	65
MANAGERS	15	802	53
EMPLOYEES	10	550	55
TOTAL	**45**	**2655**	**59**

Each interviewee was initially contacted either face to face or by e-mail and provided a short description of the research project and interview themes. All the approached candidates accepted the interview invitation. The interviews lasted from 20 minutes to two hours and were all audio recorded and subsequently transcribed to increase the trustworthiness of the study (Wilkinson & Young 2004, 211) and to facilitate the data analysis.

Most of the interviews were conducted on the premises of the case company, either in the interviewees' own offices or in small conference rooms. The interviewer was no longer employed by the company in two of the cases, so those interviews occurred outside the case company on the premises of interviewee's current employer. The interviewees were given an option to choose the language of the interviews using either English or their mother tongue. This enabled them to talk about the phenomenon in a way that is most comfortable to them. As a result, 40 out of 45 interviews were conducted in English, because it was the most natural way for most of the interviewees to discuss the issues, as it was also the company's official language. Five interviews were conducted using Finnish, which was the mother tongue of the both the interviewees and interviewer. These interviews were translated into English in the transcription phase to ensure the congruence of the data.

A face-to-face interview was not possible in eight out of 45 cases due to geographical limitations, so the interviews were conducted via phone and/or videoconference. It is important in telephone interviews to have or to establish personal contact with the interviewees and to gain their trust, otherwise they may be unwilling to express themselves openly, especially when sensitive questions are asked (Saunders, Lewis and Thornhill 2003, 269). This was not a problem in this study, as the researcher knew personally five out of the eight interviewees beforehand after having worked in the same company for over a year in close co-operation, so the trust and personal relationship were established before the telephone interviews occurred. The remaining three telephone interviews were completed successfully, too, and the researcher did not observe any behavior that could be interpreted as compromising the data credibility. The researcher did not note differences between any of the telephone and face-to-face interviews in terms of data quality or atmosphere.

It was essential to allow new issues and ideas to emerge during the interviews due to the interpretative nature of this study. This suggested the use of the semi-structured interview approach. The interviews were conducted with the help of interview guides that varied depending on who was being interviewed (see Appendix 3 and 4 for an example). For instance, the interviews of the accountants addressed partly different issues than the interview of the CFO. The interview guides included themes that were previously determined, although the interviews did not adhere

precisely to the form and order of the predetermined questions (cf. Hirsjärvi & Hurme 1991). The guides were sent to the interviewees two days before the interview, which allowed them to familiarize themselves with the topics to be discussed. The interview themes were derived from the initial framework of the study; however, they developed during the research project. The interview guides were utilized as a checklist to ensure that all the intended topics were covered and to direct conversations so that they remained on the intended course (cf. Daniels & Cannice 2004). Follow-up and clarifying questions were employed when the researcher felt the need for clarification, further detail and explanations from the interviewees' initial responses.

The researcher made notes during the interviews, especially regarding the additional questions, to clarify the answers and to identify issues that the interviewees specifically emphasized. The notes were useful in the data analysis phase to recall the interview's atmosphere and to identify issues of particular importance (cf. Wilkinson & Young 2004).

The interviews in this research consisted of both retrospective (such as the introduction of SOX) and current topics (such as interviewee's current perceptions and attitudes towards internal controls). Challenges may occur during retrospective interviews, because interviewees are fallible due to memory loss or personal reinterpretation of past events (see, e.g., Soulsby & Clark 2011; Halinen & Törnroos 1995; Simmons 1985). The only way to at least partially overcome these limitations is by triangulation of evidence, which implies use of multiple informants and complementary written material (Halinen & Törnroos 1995; Soulsby & Clark 2011). The findings and conclusions are more convincing and accurate if they are based on several different sources of information (Yin 2009, 116). The aim of the triangulation is to draw on the different strengths of various data gathering methods. Interviews can provide in-depth information and personal feelings; secondary sources may complete the data with factual information, whereas observation might indicate discrepancies between what is said and what is actually occurring within the organization. (Eriksson & Kovalainen 2008; Pettigrew 1990) The facts presented through interviews were verified by reflecting them to the data gathered from internal data repositories. What's worth acknowledging is that in this study the personal feelings noted above also were important, as those were in scope of this study.

Field notes were also taken during the time spent in the field in situations when the researcher felt it useful to record the behaviors, activities, events, and other features of an observation setting. Notes included also the researcher's own thoughts, ideas, questions, and concerns related to the research. This data consist of 11 separate field note diaries altogether, with lengths from one to five pages each. The notes were written during 2009-2012.

Along with the semistructured interviews, field notes and use of data repositories, the secondary data gathering method was *observation*, which means collecting empirical data by human, mechanical, electrical, or electronic means (Eriksson & Kovalainen 2008, 86). Observation occurred in several ways during the researchers' daily work in the case company, because she actively participated into internal control-related activities, such as control assessment sessions in various subunits and countries as well as the control development and design-related projects. Observation also occurred through attending various internal meetings, trainings and workshops and through informal discussions with other members of the organization. The researcher took general notes from the observations and included those into the field note diaries.

One of the advantages of making observations is that they record actions as they occur, which is different from people describing afterwards what they said or did or what they believe they will say or do in the future, as people do in interviews (Eriksson & Kovalainen 2008, 86). On the contrary, observation does not provide insights into what a person thinks about an action or what might motivate it. This issue was tackled by data triangulation, i.e., conducting the interviews as the primary data-gathering method. Figure 1 roughly summarizes the data triangulation within this study.
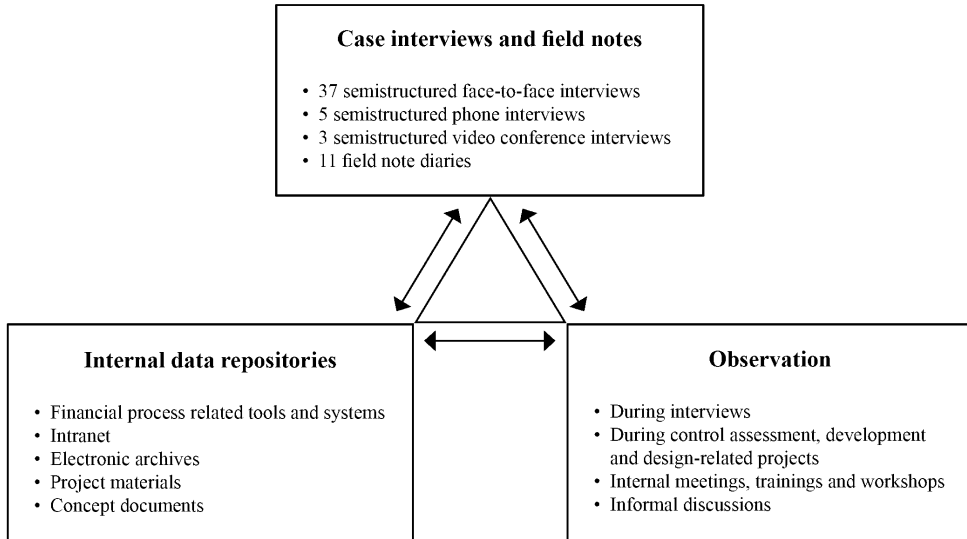
Figure 1. Data triangulation in this study

During the data gathering, the researcher carefully communicated to the SOX community and interviewees about her role in the field. Access to the relevant data and materials was secured by agreement with the Group Controller.

1.4.4   Data analysis

Unlike quantitative analysis, qualitative data analysis has no well-established methods or guidelines available. Thus, data analysis is regarded as one of the most challenging aspects of qualitative research (Eisenhardt 1989, 539; Miles 1983; Yin 2009, 127). The aim of the data analysis is to find meanings and explanations and to interpret the data with a view to drawing conclusions. Data analysis is greatly dependent on the researcher's own way of rigorous thinking, together with a sufficient presentation of evidence and thorough consideration of alternative interpretations (Yin 2009, 127). As researchers are the main instrument in qualitative data analysis, it is not always possible to identify or describe in detail from where a specific insight originated (Langley 1999).

A preliminary data analysis was conducted during each step of the research project. A more systematic analysis occurred after all data were gathered. Interviews were transcribed into written form in parallel with data gathering. Since there were 45 interviews with an average length of 59 minutes, CAQDAS[7] software, QSR Nvivo, was utilized to support the comprehensive analysis. Using specially designed software for analyzing large qualitative data facilitates the management, organization and analysis of the data.

Sinkovics, Penz and Ghauri (2008) also suggested that CAQDAS helps to formalize the analytical process and thus contributes to more reliable research findings. However, it is the researcher who decides the theoretical concepts and ideas employed to frame the study (Eriksson & Kovalainen 2008; Lindsay 2004). As suggested by Eriksson and Kovalainen (2008), the analysis in this study was based on analytical frameworks that were developed prior to the analysis. The process employed in data analysis involved data summarization, classification and interpretation. Using the NVivo software enabled the rapid retrieval of specific quotes based on various search criteria. The contents of the interview transcripts were organized to focus on both the variables and the relationships between the variables. The transcription enabled the researcher to identify patterns in the explanations provided by interviewees and to draw out both common and unique

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[7]   CAQDAS is an acronym for computer-assisted qualitative data analysis and is employed to refer to special computer software for handling qualitative analysis (see Eriksson & Kovalainen 2008, 106).

themes. These allowed the identification of related categories that contributed to the explanation of practices and relationships (Shank 2006).

The data were arranged in chronological order to ease the analysis, as suggested for the longitudinal qualitative data (e.g., Rowley 2002, 23; Mäkelä 1990, 53). "A critical Incident Chart" (see Miles & Huberman 1994) was created to outline the major events within the case company and its environment during the research period. This provided a more comprehensive visual representation of the data analysis.

Furthermore, thematic categories were defined and used to facilitate the comparison and coding (Saunders, Lews and Thornhill 2003, 381; Mäkelä 1990, 54). All the interview transcripts, field notes and other written material were analyzed several times in a search for the themes and patterns suggested by the theoretical perspectives that were drawn on to address the research questions (Scapens 2004). As a result, particular sections of the interviews were highlighted and grouped into categories, such as:

- Technical and social controls before SOX
- Establishment of the SOX Program
- Technical and social controls after SOX
- Internal control components (based on COSO framework)
- Introduction of the SOX controls to the organizational units
- Objectives of the controls
- Managerial intentions for the controls
- Presentation of controls
- Employee perceptions of controls
- Control performance.

Once the data were categorized, the key findings in each category were analyzed in the light of the relevant literature. Several quotes were selected from the material to illustrate the empirical material, demonstrate the case study findings, provide additional insights and strengthen the study findings.

1.5   Structure of the study

This research report comprises four chapters. The first chapter's purpose is to introduce the motivation, research objectives and research setting, introduce the methodological considerations and explain the case study method used in this study in detail.

The second chapter discusses the theoretical and conceptual foundations relevant for this study in more detail, defines the concepts of organizational control systems and internal control, and analyzes the relationship between these two concepts. It also introduces the Sarbanes-Oxley legislation, as an important part of the case study setting. The concepts of social and technical control are at the core of this study, so they are also introduced. This chapter also looks at the most relevant management control frameworks in this study, including Simons' Levers of Control framework of 1995 and its refined version by Tessier and Otley (2012a). Last, this chapter discusses the use of and development of the frameworks and concepts relevant in this study.

Chapter three presents the actual empirical examination of the design and implementation of a system of internal control. First, it describes the case company story about the SOX compliance program. Then, it reflects on the empirical evidence through the literature around internal control and management control – adding both technical and social control perspectives into the analysis. This chapter will also interpret the case analysis via the COSO framework for internal control (2013), the framework by Tessier and Otley (2012a) and the literature on technical and social control. Finally, chapter three discusses the empirical findings and presents the refined framework, which pulls together the analysis of the design and implementation of an internal control system based on the current internal control literature and the Tessier and Otley (2012a) framework. The end of the chapter summarizes and discusses this study's key findings.

Chapter four presents the key conclusions of this study and discusses some managerial and legislative implications and evaluates the study's validity and reliability. Last, this chapter presents the study's limitations and some suggestions for future research.

2 Theoretical and conceptual foundations

2.1 The concept of organizational control systems

This chapter introduces both internal control and management control to provide understanding of the two topics. The different typologies and concepts of controls in the management accounting and control literature include strategic control, management control, internal control, and management control systems, to name just a few of them. These different concepts are used in multiple, different contexts and for different purposes and have different interpretations among various authors, which leads to many overlaps between the concepts. This study will reflect many of these partly overlapping control concepts, those definitions are listed in Appendix 1.

The term "control" is ambiguous due to the difficulty of translating it into other languages, such as Finnish. Pfister (2009, 15) noted that some variations or differences in interpretations may be due to reasons that are more linguistic in nature. The meaning and use of the English word control is quite different than, for example, when control is directly translated into Swedish, German or Finnish language. The English term "control" includes more proactive and forward-looking meanings, whereas in Finnish, for example, control has more reactive and backwards-looking meanings. However, it can be argued that control is one of the key functions of management.

Merchant (1985, 1-2) summarizes the definition of control as "keeping things on track" and identifies it as "the final function in the management process." Anthony, Dearden and Bedford (1989, 5) provided a definition of control that emphasized command and control:

> "Control is the process of guiding a set of variables to attain a preconceived goal or objective. It is a broad concept applicable to people, things, situations and organizations. In organizations, it includes various planning and controlling processes."

Organizations achieve control in many ways, ranging from direct surveillance to feedback systems to social and cultural control (Simons 1995, 5). Many researchers

conclude that control means different things to different people; thus, it can be viewed from many different perspectives. Chua, Lowe and Puxty (1989, 4), for example, articulated these three distinct meanings of control:

- as a means of steering or regulation, which is the classical cybernetic meaning;

- as a means of domination of one or more people or groups of people by other people or groups, which has a more sociological and political tone; and

- as a process of management control and power.

It is assumed that a certain degree of control is necessary to manage any organization. Control is used as a means of ensuring that participants will act in accordance with an organization's objectives. Ouchi (1979, 845-846) argued that the design of organizational control mechanisms must focus on the problems of achieving cooperation among individuals who hold partially divergent objectives. Basically, such a gathering of people can be moved towards cooperative action through one of three devices (Ouchi 1979):

- a market mechanism that precisely evaluates each person's contribution and permits each to pursue non-organizational goals but at a personal loss of reward;

- a clan mechanism that attains cooperation by selecting and socializing individuals such that their individual objectives substantially overlap with the organization's objectives; and

- a bureaucratic mechanism that does a little of each: it partly evaluates performance as closely as possible, and it partly engenders feelings of commitment to the idea of legitimate authority in hierarchies.

Merchant and Van der Stede (2016) distinguish four categories of control: action controls, results controls, personnel controls and cultural controls. Action, personnel and cultural controls define to individuals and groups what are desirable and undesirable actions for the organization. Results controls are based on monitoring the actions taken. Results controls do not determine the actions employees should take but focus their attention on the results to be achieved and, hence, motivate them to take appropriate actions they believe will generate the desired results. Results and action controls are often defined as formal or bureaucratic controls, which are based on rules and prescribed procedures (Ouchi 1979). By contrast, informal or softer (personnel and cultural) controls do not usually have predefined forms and may occur spontaneously. Personnel controls seek to increase the likelihood of employees self-monitoring, whereas cultural controls are used to encourage mutual monitoring.

An organization's culture is based on shared traditions, norms, beliefs, values, ideologies, attitudes, and ways of behaving; thus, it creates a powerful group pressure on individuals who do not act compliantly. (Merchant & Van der Stede 2007).

One of the most cited classifications for management controls is the four levers of control by Robert Simons (1995). According to this typology, diagnostic control is the standard use of performance measures and is primarily focused on feedback control. Performance is measured against a target and management acts on the variance. Diagnostic control also means that performance is regularly reviewed in formal meetings such as board, departmental and team meetings. Budgeting is an example of such a system. Interactive control is an approach senior managers use to create meaningful and purposeful conversations right across the company and to interact at all levels. Boundary systems are a statement of what the company is not going to do: it is a mechanism for ensuring people do not spend time investigating and developing new opportunities that the company is never going to pursue. Finally, belief systems are there to communicate the vision, mission and values of the business. In so doing, they are communicating what the organization is trying to achieve and how individuals are to behave to each other, to customers and suppliers and to society at large.

In any given control process, a set of controls must be designed: these sets constitute segregation of duties, authorization procedures, security and system access, verification- and supervisory review, to name a few (Picket 2001, 51-53). The importance of balancing different types of controls has been pointed out in general management control research (see, for example, Simons 1990), and prior research has revealed a wide range of different types of controls. Most of these control definitions overlap with the controls introduced in accounting and auditing texts but use different technical terms (Merchant & Otley 2007, 788). As a result, the research on control generated by different fields remains fragmented and has developed rather independently of each other. Hence, there seems to be an obvious need to integrate the different findings and concepts (Arwinge 2010, 133; Maijoor 2000, 102; Merchant & Otley 2007, 788).

As just demonstrated, the literature provides several different classifications and categories for organizational controls. Furthermore, the terms management accounting (MA), management accounting systems (MAS), management control systems (MCS), and organizational controls (OC) are sometimes used interchangeably. Chenhall (2003) makes the following distinction between these terms:

> "MA refers to a gathering of practices such as budgeting or product costing, whereas MAS refers to the systematic use of MA to achieve some goal. MCS is a broader term that encompasses MAS and also includes other controls such as personal or clan controls. OC is sometimes used to refer to controls built into

activities and processes such as statistical quality control, just-in-time management."

Organizations' control systems comprise a set of different forms of control that systemically interact with each other. However, many studies focus only on looking at certain types of controls, such as accounting controls or formal controls in general. Malmi and Brown (2008), who have criticized this and highlighted especially the importance of informal control, introduced a package of controls framework consisting of five control types: planning, cybernetic, reward and compensation, administrative and cultural controls.

This study also looks at the control systems from a holistic perspective and uses terms technical and social control to recognize the different control types. Furthermore, it will combine the concepts of management control systems (MCS) and internal control (IC). MCS have been referred to as "the set of formal procedures and processes that managers use to help ensure that employees achieve both their own and their organization's objectives" (Bisbe & Otley 2004; Otley & Berry 1980; Tucker & Parker 2013). Internal control traditionally had a fairly direct relationship to the accounting records, but recently the definition has broadened closer to the concept of general management control and corporate governance (Arwinge 2010, 13).

2.2   Internal control

According to Kinney (2000, 83), knowledge about internal controls is an essential element that affects the welfare of management, corporate directors, shareholders, an entity's trading partners, auditors and society at large. Public attention has increased towards the topic during the past two decades as new laws, regulations and pronouncements have emerged in the area of internal control, (see, e.g., Caplan 1999; D'Aquila 1998; Jokipii 2006; Krishnan & Visvanathan 2007). Different stakeholders, such as regulators, supervisory authorities, audit committees, top management, business analysts and investors, are showing increasing interest towards firms' internal control and governance practices. Despite the growing interest in the topic of internal control, it is still yet relatively unexplored by researchers, and boundaries for the definition of internal control seem unclear (see, e.g., Arwinge 2010; Barra 2010; Liu 2005; Maijoor 2000).

Recent literature has differentiated the view of internal control into a limited view and a more comprehensive view (see, e.g., Pfister 2009, 17). Ever since the concept of internal control was established in formal literature over 100 years ago (Dicksee 1892; 1905), it seems that there have been ongoing debates about its definition, some of them quite controversial (Arwinge 2010, 13; Hay 1993; Heier, Dugan and Sayers 2005).

The limited view links internal control closely to the accounting records and views internal controls as the "detailed, procedural checks and balances" (Simons 1995, 84). With the more recent, broader definitions, internal control has significantly expanded its domains into general management control and corporate governance (Arwinge 2010, 109), placing more emphasis on a holistic approach to internal control and emphasizing operational effectiveness, efficiency and compliance with laws, regulation, and internal policies. Thus, internal control today forms an integral part of organizational governance.

Next, we will take a closer look at these two aspects of internal control literature – the limited and comprehensive views.

2.2.1   Limited view of internal control

The traditional, narrow perception of internal control draws upon accounting and auditing theory, which focuses on auditors performing their duties as prescribed by generally accepted auditing standards. English audit specialist Lawrence Dicksee (1905, 53) referred in his book to the general system of *internal checks*:

> "This is a matter that may very profitably engage the careful attention of the Auditor, for not only will a proper system of internal check frequently obviate the necessity of a detailed audit, but further possesses the important advantage of causing any irregularities to be corrected at once, instead of continuing until the next visit of the auditor."

That statement by Dicksee (1905) is considered to be one of the first explicit accounts and slight recognition of the importance of internal control (Arwinge 2010, 102; Brown 1962; Heier et al. 2005). Heier et al. (2005) argued that one of the first times that the term internal control was used in authoritative literature was the year 1936, in a work entitled *Examination of Financial Statement by Independent Auditors*. Section II of this document by the American Institute of Accountants stipulates that:

> "In determining the nature and extent of this examination, the accountant will necessarily take into consideration, among other things, (a) the purpose of the examinations, (b) the amount of the detail included in the statements to be covered by this report, (c) the type of business accounts which are to be examined, and (d) the system of internal check and control." (American Institute of Accountants 1936, 7)

As that statement demonstrates, the American Institute of Accountants (1936, 7) referred to internal control as the system of internal check and control, which closely

resembled Dicksee's definition of internal control provided in 1905. In these early interpretations of internal control, the term was closely linked to the accounting procedures and the financial reporting process, as it was used as a means by which the financial statement auditor could improve audit process efficiency and effectiveness. Ever since, the focus of the academic research concerning external auditing has been on these traditional accounting controls, which are studied in the context of decision making by auditors. As a result, the main interest has been in how accounting controls affect the reliability of financial reporting. Even in today's literature, internal controls are still linked to the auditing field.

To conclude, the traditional approach views internal control as primarily related to financial controls: controls that are in place to safeguard assets and ensure financial reporting quality, such as segregation of duties, authorization policies, organization structure and credibility tests (Maijoor 2000, 104-105). Merchant and Van der Stede (2016, 82) also refer to internal controls as "the control-oriented term used by the auditing profession." According to them, most of the internal controls fall into the category of what they call behavioral constraints, such as segregation of duties, which aim to prevent employees from doing things that should not be done. The constraints can be applied physically or administratively.

Simons' (1995, 84-85) view of internal control is similar to Merchant and Van der Stede's. He refers to internal controls as the "detailed, procedural checks and balances" that are designed to safeguard assets from misappropriation and ensure that accounting records and information systems are reliable. Simons (1995, 86) distinguishes internal control from other levers of control and points out that internal controls are essential to ensure the integrity of the other systems that managers use to implement strategy (Figure 2).
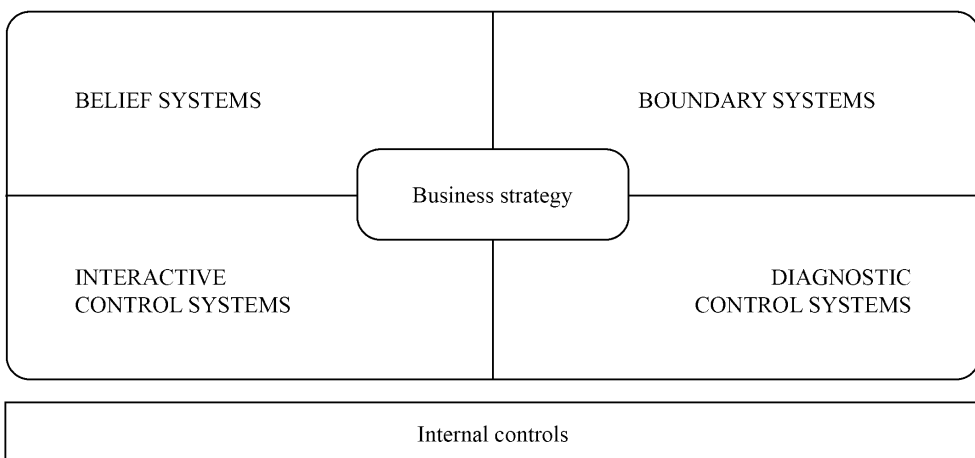
Figure 2. Internal controls: The foundation for effective control (Simons 1995, 86)

According to Simons (1995, 85), internal controls are different from boundary systems. The latter specify the risks to be avoided, whereas internal controls specify the detailed procedures and safeguards for information handling, transaction processing, and record keeping. Belief systems and boundary systems (introduced in chapter 2.5) delineate core values and proscribed behaviors, but management must still guard against both willful violations and unintentional errors in company processes (Simons 2014, 280). Data from different measurement systems, such as profit statements, ROI and EVA measures and balanced scorecards, can be relied upon only if managers have faith in the accuracy of the numbers. Simons argues (2014, 280) that every manager should be alert to the possibility of errors in the numbers, which can occur for two reasons; untrained staff may make unintentional errors or employees may misappropriate company assets for personal gain and then falsify accounting records to avoid detection.

Thus, the limited view of internal control suggests that effective internal control is the primary means for preventing, detecting and correcting fraud and errors by employees. Carmichael stated (1970, 237), "individuals have inherent mental, moral and physical weaknesses; therefore internal control methods and measures are necessary to achieve information processing system goals." Segregation of duties is one of the key internal control mechanisms against fraud (see Lee 1971; Merchant & Van der Stede 2016, 82; Simons 2014, 280), which generally refers to the appropriate segregation of activities between people and functions. Other fraud controls include fraud policies, whistle-blowing hotlines, employee reference checks, vendor contract reviews, analytical reviews, password protection, firewalls and digital analysis (see Bierstaker, Brody and Pacini 2006, 523).

Simons (2014, 280) classifies internal controls into three categories: **structural safeguards, staff safeguards** and **system safeguards** (Figure 3). Simons emphasizes that each of these safeguards is needed in any business where the manager or owner delegates custody of assets and/or the processing of accounting transactions to subordinates. Simons distinguishes internal controls from other levers of control and states that internal controls form the foundation for every business.
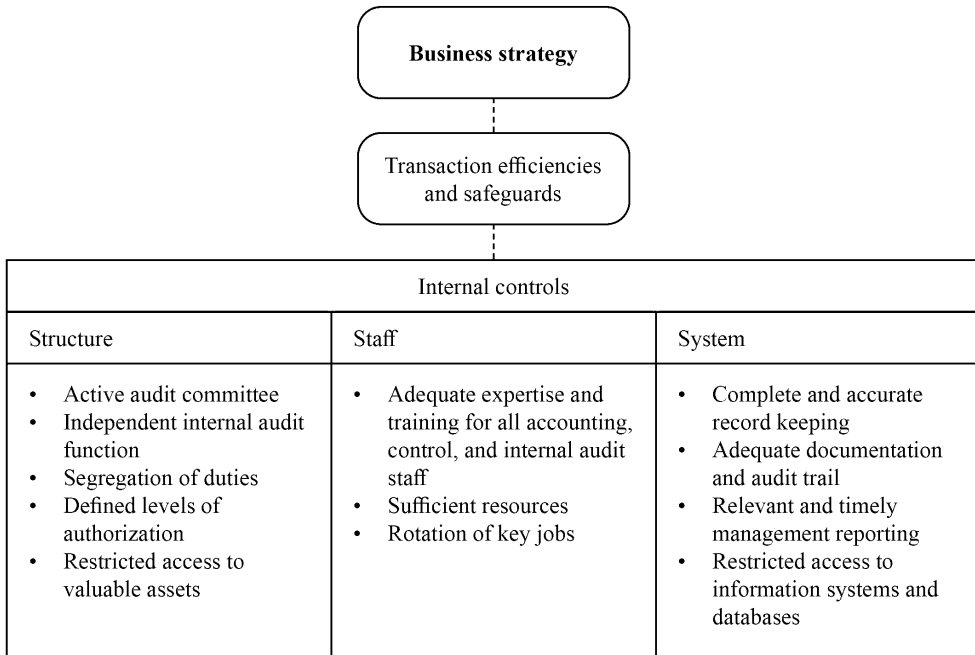
Figure 3. Elements of internal control (Simons 1995; 2014)

Structural safeguards

Structural safeguards include an active audit committee of the board, an independent internal audit function, segregation of duties, defined levels of authorization, and restricted access to valuable assets (Simons 1995).

According to Simons (2014, 280), the cardinal rule of internal control is that one person should never handle all aspects of transactions involving valuable company assets. *Segregation of duties* requires one person to check or reconcile the work of another. The segregated activities generally are divided into authorizing, approving, recording, issuing and receiving assets, and making payments. Once more individuals are involved in processing one transaction, the likelihood of catching any errors or inconsistencies will increase.

Most employee frauds are perpetrated when an individual has access to either cash or securities and the ability to record accounting transactions for those actions (Simons 2014, 280). Little and Best (2003, 420) noted that research on internal controls and external auditors' judgments has indicated that the assessment of the segregation of duties is a dominating factor in the auditors' evaluation of the internal control structure. It is assumed that adequately segregated duties will deter or detect fraudulent activity, thus having positive effects on firm performance.

Defined levels of authorization is "the principle that requires an individual's access to company funds to be commensurate with their level of responsibility, thereby limiting exposure to error and fraud" (Simons 2014, 281). For example, a manager could have authorization to approve invoices up to 5.000 Euros, whereas all invoices above that amount must be approved by a superior.

Restricted access to valuable assets means that the assets subject to theft or misuse should be protected by vaults, gates and locks, for example. When valuable assets cannot be easily counted and reconciled, direct surveillance becomes necessary to ensure that individuals are adequately safeguarding the assets. The intangible assets, such as patents, trademarks and copyrights, should also be secured.

Boards of directors are ultimately responsible to shareholders for the integrity of internal controls. In larger companies the board selects from its members *an audit committee*, which oversees the work of independent auditors, i.e., external and *internal audit*. The importance of an effective audit committee is widely recognized in both professional and academic writing as well as in most regulatory texts. In a Welsh study on effective working relationships between audit committees and internal audit, Davies (2009, 44) claims that "*the role of the audit committee has definitely evolved.*" The role of an audit committee traditionally has been to oversee the financial reporting process, but their responsibilities have extended recently towards overseeing risk management, control, compliance and internal investigation processes.

Recent studies (Turley & Zaman 2007; Zaman & Sarens 2013) on audit committee work have also shown that the informal processes and structures - as opposed to the formal ones that are often specified in corporate codes and regulations - are important and may enhance audit committee effectiveness. Zaman and Sarens (2013) emphasize the importance of the background of the audit committee chairperson on the effectiveness of an organization's governance process. Their study strengthens the idea that in addition to formal mechanisms, such informal processes as communicating outside of formal, pre-scheduled meetings between the internal audit and audit committee, play a significant role in corporate governance.

Staff safeguards

Staff safeguards include adequate expertise and training for all accounting, control, and internal audit staff, sufficient resources, and rotation of key jobs.

Simons (1995, 85, 181) argues that internal control relies on staff professionals such as trained accountants, who typically install and maintain controls that are then periodically evaluated by internal and external auditors. Simons (2014, 283) emphasizes that the design and operation of good internal controls requires significant technical expertise, typically attained via professional education, such as

certified public accountant (CPEs) and certified management accountants (CMAs). According to Simons (2014, 283), "accounting professionals must be hired, systems installed, and clerical staff trained to perform reconciliations and checks."

Rotation in key jobs is a control to discover irregularities in financial accounts. If an employee is hiding accounting irregularities, an independent person who is asked to take over that job for a period of time will usually discover the discrepancies. Thus, Simon suggests (2014, 281) that a good practice is to insist that employees with access to critical accounting records take regular vacations.

System safeguards

System safeguards are designed to ensure adequate procedures for transaction processing and timely reports. These include complete and accurate record keeping, adequate documentation and audit trail, relevant and timely management reporting, and restricted access to information systems and databases. These system safeguards are close to the early definitions for internal controls referred earlier (Dicksee 1905; American Institute of Accountants 1936).

Complete and accurate record keeping deals with the very basic functions of accounting. Company must have procedures that ensure all transactions are recorded accurately and promptly in the accounting records. According to Simons (2014, 282), accounting data becomes worthless for management purposes if it is inaccurate and untimely. An audit trail gives a step by step documented history of a transaction. It enables the auditor to trace the financial data from general ledger to the source document, such as an invoice or a receipt. For example, a proper audit should enable the auditor to trace a customer payment back to an accounts receivable statement, which in turn can be traced back to a sales invoice and shipping record.

Integrity of accounting data can only be assured if access to information systems is restricted to those who have a legitimate right to change or view accounting records (Simons 2014, 282). This calls for secure databases that prevent unauthorized access or tampering. Passwords, data encryption, and internal verification routines are necessary to ensure the integrity of information.

Managers should receive accounting and control information in a timely manner. If the reports are provided late, feedback may be too late to act upon, and the business may be vulnerable to losses or poor management decisions based on faulty information (Simons 2014, 283).

Reflection

Simons (1995, 85) acknowledges the risk of opportunistic actions of human nature when designing diagnostic controls such as budgets. Humans have a natural

tendency to do what must be done to meet budget. Thus, managers should not only ask for more results but also send a message that bending the rules to meet targets is not tolerated. According to Simons (1995, 84), internal controls are then used as a solution to ensure that diagnostic control systems operate effectively, i.e., reported data is accurate and complete.

Using the preceding example, Simons views internal controls as purely technical controls, such as checks and balances to ensure the integrity of the reported data. This view ignores the social part of the control. In fact, the example of a manager sending the message not to bend the rules exemplifies the tone at the top, a core element of social control. This is part of the belief systems in Simons' categorization, which are ''the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization'' (Simons 1995, 34). Simons does discuss management attention in the context of internal control, but it is weakly integrated into the concept of tone at the top and leading by example (c.f. Pfister 2009, 182). To summarize, Simons (1995) clearly separates the social part of management control as distinct from internal control.

Another limitation of this limited view of internal control is the responsibility for internal controls. According to Simons (2014, 284) good internal controls provide the checks and balances to assure managers that errors will not creep into critical operating systems, and unauthorized actions will not be allowed to impair assets. Simons (2014, 284) adds that managers usually should not spend too much time on designing or reviewing the details of internal controls. Instead, "they delegate this responsibility to trained accountants and auditors." Simons (2014, 284) does acknowledge that business managers should be aware that "if there is ever a significant financial or operating loss due to poor internal controls, they must shoulder the responsibility. Because systems of internal control are essential for the security of assets and the integrity of performance information, managers are accountable for ensuring these controls are in place. Thus, business managers must be sure that sufficient resources are devoted to operating these controls effectively."

Based on that, Simons limits the responsibility for demonstrating internal control to the finance and auditing area and places little emphasis on the fact that internal control should, in fact, be of concern to all people within an organization (Pfister 2009, 18). Furthermore, by distinguishing internal controls from other management controls and by classifying them to only focus on detailed procedural checks and balances, we fail to recognize the social form of internal control, which, according to the comprehensive view, forms an integral part of an organization's internal control.

Furthermore, Simon's framework seems to evaluate the effectiveness of internal control based on the success of the technical controls (i.e., whether there are enough qualified resources to perform the detailed procedures and balances). However, not

even the most sophisticated controls are enough when management wants to overlook them. As we have witnessed in multiple corporate scandals during the 2000s, the most crucial control failures have resulted not from the missing procedural checks and balances but from a toxic or impassive corporate culture. For example, in the case of the Siemens bribery scandal exposed in 2007, several hundred senior-level people from the company engaged in bribery, despite their established compliance controls, code of conduct and clear rejection of bribery as a business practice. Even though they had all formally signed the business code of conduct, not only were bribes informally accepted but sanctions were also not carried out. What these examples indicate is that culture influences control and control also influences culture (Pfister 2009, 3). Campbell and Göritz (2014) found that corrupt organizations perceive themselves to fight in a war, which leads to their taken-for-granted assumption that "the end justifies the mean". This assumption inspires many values and norms of the organizational culture.

A study by Zaman & Sarens (2013) also found evidence that in addition to formal mechanisms, informal processes such as communication outside of formal pre-scheduled meetings between the internal audit and audit committees play a significant role in corporate governance. This is a clear sign of the need for social control also in the audit committee's work. Thus, to better study internal control, we must take into consideration the interaction between technical and social forms of control and view the internal control system holistically.

2.2.2 Comprehensive view of internal control

A broader definition of internal control has significantly expanded the concept closer to general management control and corporate governance (Arwinge 2010, 109; Maijoor, 2000; Merchant & Otley 2007, 787), placing more emphasis on a holistic approach to internal control and emphasizing operational effectiveness and efficiency and compliance with laws, regulation, and internal policies.

The academic study concerning internal control from the wider perspective draws on theoretical concepts found in fields other than accounting and auditing, such as management control, organization, risk management and strategy (Kinney 2000, 88; Maijoor 2000, 105). Many of these studies do not specifically mention the term internal control, even though the areas under study fall under the broader definition of internal control.

Control research from an organization theory or management control perspective has studied controls mainly in the context of the organizational effectiveness of departments and divisions. The typical organizational measures distinguished in this area of research are different control typologies, such as action controls, results controls, personnel and cultural controls (Merchant & Van der Stede 2016). The

action controls listed by Merchant and Van der Stede (2016, 81-84) are the accounting controls that have typically been in the focus of literature concerning external auditing. Results controls refer to management systems based on rewarding individuals for generating good results. Personnel and cultural controls are based on systems in which employees control either their own or each other's' behaviors. The comprehensive view of internal control considers all of these different types of controls as part of the internal control system.

Many national corporate governance reports and reforms include recommendations for internal control. The guidance provided by public authorities in the field of auditing and corporate governance uses wide definitions of internal control. Maijoor noted already in 2000 that our understanding of internal control from a wider corporate governance perspective is incomplete. According to Maijoor (2000, 108), assumed relationships that are critical from a corporate governance perspective and are thus critical for policy recommendations for internal control should be further studied.

One of the most referenced definitions in the practical literature for the comprehensive view of internal control is the COSO Internal Control (COSO IC[8]) framework (2013). The history of this framework goes back to the 1980s, when the adequacy of financial reporting systems was challenged by the accounting scandals (Ge & McVay 2005, 139). The National Commission on Fraudulent Financial Reporting (known as the Treadway Commission) was established in the U.S. in 1985 to investigate the causes of fraudulent financial reporting and make recommendations to reduce its likelihood. The Treadway Commission addressed internal control aspects such as the control environment, code of conduct, audit committees, and internal audit. The Commission's recommendations led to a task force that was built under the Committee of Sponsoring Organization of the Treadway Commission (COSO).

COSO's main objective was to identify the factors that cause fraudulent financial reporting and to make recommendations to reduce its incidence. COSO has established a common definition of internal controls, standards, and criteria against which companies and organizations can assess their internal control systems. COSO emphasizes the importance of management's involvement in understanding internal control functions and establishing an adequate and effective control system. The first COSO framework was established in 1994, and it was updated in 2013 to ease the use and broaden the application of the framework. However, the core definition of

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[8]   COSO has published several frameworks, both for internal control (Internal Control – Integrated Framework, 2013) and risk management (Enterprise Risk Management – Integrating with Strategy and Performance, 2017). When COSO framework is mentioned in this study, it refers to the Internal Control – Integrated Framework.

internal control has remained the same even after the revision. This framework has now become the leading guidance on internal control for directors and managers worldwide (Power 2007, 49).[9]

The traditional approaches, in which controls are generally directly related to the accounting records, have now been supplemented by the wider approach to internal control. One of the fundamental elements of this comprehensive view is that internal control is defined as a *process* as opposed to being a structure or a system[10], which was the case in earlier definitions (Heier et al. 2005, 57). COSO (2013) defines internal control as a process, effected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

- *Operations Objectives* - These pertain to the effectiveness and efficiency of the entity's operations, including operational and financial performance goals, and to safeguarding assets against loss.

- *Reporting Objectives* - These pertain to internal and external financial and non-financial reporting and may encompass reliability, timeliness, transparency, or other terms as set forth by regulators, recognized standard setters, or the entity's policies.

- *Compliance Objectives* - These pertain to adherence to the laws and regulations to which the entity is subject.

COSO (2013) defines internal control as consisting of five interrelated components. These components provide an effective framework for describing and analyzing the system of internal control implemented in an organization. These five components are

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[9] Kinney (2000, 84) notes that the COSO definition is widely accepted in practice, which can be seen through the application of similar conceptual definitions by other relevant groups around the world. For example, the Canadian Guidance on Control Board (CoCo) defines internal control as "all the resources, processes, culture, structure, and tasks that, taken together, support people in achieving those objectives". The CoCo definition explicitly mentions internal elements such as "internal reporting," "information within the organization," and "internal policies" as part of internal control. The Institute of Chartered Accountants in England and Wales (ICAEW) emphasizes the importance of responding to risk and, for instance, states that internal control has to do with "behaviors." The European Federation of Accountants (FEE) defines internal control as going "beyond procedures" and includes "elements such as corporate culture, systems, structure, policies and tasks" into the definition, which relate to governance. All these definitions support the COSO definition.

[10] While acknowledging this notion between a system and a process, this study uses the term "internal control system" to describe the comprehensive view of internal control.

- control environment,

- risk assessment,

- control activities,

- information and communication and

- monitoring activities[11].

Figure 4 demonstrates the relationship between the internal control objectives and components within different organizational entities, divisions, operating units or functions. The five COSO components are described in more detail later in this chapter.

Figure 4. COSO Internal Control Integrated Framework (COSO 2013)

The five COSO components are further clarified via 17 principles. These principles provide the basic ideas that should be considered when designing or assessing the system of internal control. Table 4 outlines these 17 principles.

[11] The COSO model was updated in 2013: the name of the "*monitoring*" component was changed to "*monitoring activities*". To ensure consistency with this text, the latter term is used only in this study.

Table 4. Internal control components and principles (COSO)

INTERNAL CONTROL COMPONENT	PRINCIPLES
CONTROL ENVIRONMENT	1. Demonstrate commitment to integrity and ethical values 2. Ensure that board exercises oversight responsibility 3. Establish structures, reporting lines, authorities and responsibilities 4. Demonstrate commitment to a competent workforce 5. Hold people accountable
RISK ASSESSMENT	6. Specify appropriate objectives 7. Identify and analyze risks 8. Evaluate fraud risks 9. Identify and analyze changes that could significantly affect internal controls
CONTROL ACTIVITIES	10. Select and develop control activities that mitigate risks 11. Select and develop technology controls 12. Deploy control activities through policies and procedures
INFORMATION AND COMMUNICATION	13. Use relevant, quality information to support the internal control function 14. Communicate internal control information internally 15. Communicate internal control information externally
MONITORING ACTIVITIES	16. Perform ongoing or periodic evaluations of internal controls (or a combination of the two) 17. Communicate internal control deficiencies

This study will look at internal control through this comprehensive view and use COSO as the core definition for internal control. Next, we will look at the five COSO components (2013) in more detail and reflect the recent academic work within these elements.

Control environment

According to COSO, the **control environment** forms a foundation for an effective internal control, consisting, e.g., of the tone at the top, holding people accountable for their actions and promoting an organization's ethical values (COSO 2013). A weak control environment leads into ineffectiveness of other internal control elements. This idea differs from Simons' view (1995), in which the technical (internal) controls form the basis for other levers of control.

Control Environment is the set of standards, processes, and structures that provide the basis for carrying out internal control across the organization. The board of directors and senior management establish the tone at the top regarding the importance of internal control, including expected standards of conduct. Control

environment is the foundation for all other components of internal control, providing discipline and structure. Five principles of the control environment are:

1. The organization demonstrates a commitment to integrity and ethical values. This means that management and board management actions should contribute to strengthening standards of conduct, integrity and ethical values. The oversight function of the board of directors exercised through policies and committees has attracted wide attention from researchers and has been found to play a crucial role in preserving integrity of accounting practice (e.g., Lamberton, Mihalek and Smith 2005; Merchant & Rockness 1994).

2. The board of directors demonstrates independence from management and exercises oversight of the development and performance of internal control. In other words, the board of directors must accept its supervisory responsibilities and the executive management must take the appropriate actions to implement effective control system.

3. Management establishes, with board oversight, structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives. This principle provides for executive management and the management board to introduce multiple structures (operational units, legal entities, geographical distribution, outsourcing of services) and various reporting lines to support the achievement of objectives.

4. The organization demonstrates a commitment to attract, develop, and retain competent individuals in alignment with objectives. This means that organizations should look for applicable policies and practices for anticipating and developing competencies. In fact, in many of the internal control weaknesses, the root cause relates to personnel. Personnel weaknesses may include a shortage of skilled people, disgruntled employees, inadequate skills, poor training, overwhelming workloads, excessive staff turnover, absence of mentoring, weak segregation of duties and poor supervision.

5. The organization holds individuals accountable for their internal control responsibilities in the pursuit of objectives. This principle refers to the mechanisms established to empower the staff and to take corrective measures in different situations. Appropriate performance measures, incentives and other rewards must be aligned with the responsibilities established both on the short-term and on the long-term objectives.

As such, the control environment is much about tone at the top. Prior empirical research has primarily focused on structural elements of the board of directors (e.g., gender diversity and CEO age) and examined their effect on organizational practices,

including financial reporting (Abbott, Parker and Presley 2012; Huang, Rose-Green and Lee 2012). However, according to Amernic, Craig and Tourish (2010), a more fundamental and direct manifestation of tone at the top is the CEO's narrative language. Discursive narration is a critical element for the enactment of leadership, because it enables CEOs to construct organizational identity (Heracleous & Barrett 2001), enhance their role as sensemakers (Weick, Sutcliffe and Obstfeld 2005), manage consent (Kuhn 2008), and sharpen their charisma (Den Hartog & Verburg 1997). The narrative language deals largely with the social controls – it's about creating the culture and the context in which the employees are expected to comply with the controls. This part of the internal controls should simply not be overlooked.

Risk assessment

COSO prescribes that a second important component of the internal control process comprises the organizational **risk assessment** process. Every entity faces a variety of risks from external and internal sources that must be assessed. A precondition to risk assessment is establishment of specific suitable objectives. Risk assessment includes identification and analysis of relevant risks related to achievement of the assigned objectives. Risk assessment is a prerequisite for determining how the risks should be managed. Assessing the fraud-related risk is also important, as is constantly identifying and analyzing significant changes that may have an impact on the risk assessment. These are the four COSO principles for risk assessment:

6. The organization specifies objectives with sufficient clarity to enable the identification and assessment of risks relating to objectives. This principle lays the groundwork for doing the risk assessment itself. A company ordinarily must describe its operational, reporting (external financial, external nonfinancial, internal) and compliance objectives. According to COSO guidance, while setting strategies and objectives is not part of the internal control process, objectives form the basis on which risk assessment approaches are implemented and performed and subsequent control activities are established.

7. The organization identifies risks to the achievement of its objectives across the entity and analyzes risks as a basis for determining how the risks should be managed. As compared to the limited view on internal control, COSO looks at the objectives and risks related to operations, reporting and compliance, not just focusing on the risks related to safeguarding of assets and ensuring accuracy of financial reporting.

8. The organization considers the potential for fraud in assessing risks to the achievement of objectives. This principle looks at how fraud could

prevent the entity from achieving the objectives identified in Principle 6. The assessment that management performs with respect to this principle considers fraudulent reporting, possible loss of assets and corruption resulting from the various ways that fraud and misconduct can occur.

9. The organization identifies and assesses changes that could significantly impact the system of internal control. This principle requires an assessment of change in the organization on an ongoing basis - both externally and internally - that could affect risk. External changes include those in the economic, regulatory and physical environment. Internal changes include those in company's business lines and operations, overseas markets and operations, new technologies, as well as changes in leadership and company philosophy.

In 2004 COSO issued another framework entitled *Enterprise Risk Management - Integrated Framework* (updated in 2017). This COSO ERM framework explicitly tied internal control even closer to risk, viewing internal control as a treatment for risk exposures. Internal control as a part of ERM is thus regarded as one of the means for managing risks (Fraser & Henry 2007, 393).

Control activities

The board of directors sets the tone at the top and establishes policies by which management and the organization are to be guided. Based on these board policies, management then designs appropriate rules and procedures that will enable employees throughout the organization to ensure that management directives are carried out.

According to COSO, these policies and procedures are called **control activities**. They help to ensure that necessary actions are taken to address any risks to achievement of the entity's objectives. Control activities occur throughout the organization at all levels and in all functions. Professional standards on internal control tend to view control activities as consisting of two parts: one policy part that outlines the control objective and what should be done (i.e., describing the design of the control) and one procedure part that implements the policy (i.e., the actual performance of the control) (Arwinge 2010, 68). The COSO principles for control activities are:

10. The organization selects and develops control activities that contribute to the mitigation of risks to the achievement of objectives to acceptable levels.

11. The organization selects and develops general control activities over technology to support the achievement of objectives.

12. The organization deploys control activities through policies that establish what is expected and in procedures that put policies into action.

In general management control research, the control activities are sometimes referred to as *administrative controls* to which standard operating procedures and rules, for example, have been included (see, e.g., Langfield-Smith 1997, 208). These controls are also referred as feedforward in nature (ex-ante controls), which states what should be done, i.e., serve as guidance for future organizational behavior. Feedback controls, such as different types of monitoring controls, are in turn often considered as being vital, supplementary controls to more detailed control activities (Arwinge 2010, 68).

According to Merchant and Van der Stede (2016, 82), most internal controls fall into the category of what they call behavioral constraints, which are one form of action controls. An example of a behavioral constraint is the segregation of duties, which aims to prevent employees from doing things that should not be done. The constraints can be applied physically or administratively. Based on the COSO definition, internal control could, in fact, be any of the action controls[12] (Merchant & Van der Stede 2016), covering also pre-action reviews (approving or disapproving proposed actions), action accountability (holding employees accountable for the actions they take) and redundancy (having backup employees or equipment available). All of the action controls contribute to making it more likely that employees act in their organization's best interest (Merchant & Van der Stede 2016, 80-82).

Based on COSO, control activities contribute to mitigating and keeping the risks to the achievement of objectives to an acceptable level. Control activities include a range of diverse activities, such as approvals, authorizations, verifications, reconciliations, reviews of operating performance, physical controls such as the physical security of assets or access to assets, and segregation of duties. All of these measures fall into Simons' internal control definition (1995). According to COSO, a company should select and develop control activities, including general controls over technology, and deploy those controls through policies and procedures.

Internal control comprises a series of actions that are integrated with business activities and conducted throughout the organizational units and functions. Furthermore, Porter (1985, 46) divides business activities into primary activities that generate value, such as inbound logistics, operations, and sales, and secondary activities, such as human resource management, infrastructure and procurement that support the primary activities. The operations, reporting, and compliance aspects promoted by COSO are integrated within all these primary and secondary activities. Thus, the comprehensive view suggests that internal control is not just part of finance

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[12]   Action controls are defined in Chapter 2.5.1 in more detail.

and accounting, as the limited view claims, but is part of any other activity such as marketing and sales, logistics and technology development (Pfister 2009, 21-22).

The comprehensive view supports the idea that internal control is not an exclusive function of the board, executives, senior finance managers or internal and external auditors but of all the people in the organization. According to COSO (1994, 89):"Virtually all employees play some role in effecting control. They may produce information used in the system of internal control – for example, inventory records, work- in-process data, sales or expenses reports – or take other actions needed to effect control. These actions may include performing reconciliations, following up on exception reports, performing physical inspections or investigating reasons for cost variances or other performance indicators. The care with which those activities are performed directly affects the effectiveness of the system of internal control."

Based on that and with the comprehensive view of internal control, the control activities should be viewed as covering any of the business processes, and those are applicable to all of the employees. Thus, the perspective is wider than Simons' idea (1995, 85, 181), according to which internal control relies on staff professionals, such as trained accountants, who typically install and maintain controls, which are then periodically evaluated by internal and external auditors.

Information and communication

According to Simons (1995), internal controls are designed to ensure that accounting records and information systems are reliable. This idea is also included in the COSO definition, which states that **information** systems play a key role in systems of internal control, because they produce reports, including operational, financial and compliance-related information, which enable management to run and control the business. In other words, internal control prepares the information for management decision processes and impacts the decisions made by management.

People's ability to fulfill their responsibility and make adequate decisions relies significantly on the quality of the information they receive. Sunder (1997, 56) emphasizes that management depends on the information people share within the organization. It is people's own decisions about which information they are willing to share and how accurately and truthfully they share it. In contrast, an organization can easily go in the wrong direction if the information people receive is incomplete, incorrect or manipulated. Thus, effective internal control provides people in the organization with appropriate, timely, accurate and accessible information. As such, COSO also promotes effective **communication**, which must ensure that information flows down, across and up the organization. Effective communication should also be ensured with external parties, such as customers, suppliers, regulators and shareholders.

The COSO principles for information and communication are:

13. The organization obtains or generates and uses relevant, quality information to   support the functioning of internal control.

14. The organization internally communicates information, including objectives and responsibilities for internal control, necessary to support the functioning of internal control.

15. The organization communicates with external parties regarding matters affecting the functioning of internal control.

In general, the importance of information and communication and the must to produce relevant, timely and reliable information for decision-making purposes specifically through information-based systems is a fundamental concept of any management accounting and management control (see, e.g., Johnson & Kaplan 1987; Simons 1990, 1991 and 1995; Langfield-Smith 1997; Otley 1980, 1994, 1999, 2003 and 2008; Chenhall 2003). The control system in this context is often defined as a normative information feedback system (Simons 1991, 49) in which control systems deliver information that managers depend on when making informed decisions based on feedback on actual performance and the established organizational objectives. Simons (1991, 49) defines a management control system as "the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities" - thus highlighting the importance of information-based routines and the communicative elements of these processes.

From a financial reporting perspective, financial transactions and other types of information must be accurately recorded and distributed through information systems. Methods and systems used in the company must ensure that financial data and transactions are valid, timely recorded, properly classified, valued and comply with generally accepted accounting standards. Furthermore, from a broader perspective, however, methods and systems used should also enable managers and staff to understand and execute other internal control components (Arwinge 2010, 70). Information must be identified, captured, distributed and used in the organization so that people are able to complete their internal control responsibilities. Thus, various types of internal information systems and reporting methods should support the understanding of processes, controls, tasks and individual responsibilities (COSO 2004, 11). The information and communication systems are vital if relevant information is to be captured, distributed and acted upon in a cost-effective manner (Arwinge 2010, 70).

One of the key elements of Principle 14 is the need for separate reporting lines for employees to communicate about potential misconduct. As these so-called whistleblower channels have become more popular in organizations as a method to detect fraud and misconduct, they have also gained increased attention in the

academic field (see, e.g., Lee & Fargher 2013; Mesmer-Magnus & Viswesvaran 2005; Miceli, Near and Dworkin 2009; Dyck, Morse and Zingales 2010; Bowen, Andrew and Raigopal 2010). Most research on whistle blowing has focused on who the whistleblowers are, individual reporting intentions, the effectiveness of whistle-blowing systems, and the consequences of whistleblowing. Lee and Fargher (2013) studied variation in the extent of whistleblowing disclosures. As a measure of whistleblowing implementation, they further examined the provision of a hotline channel. Their results suggest that the extent of whistle-blowing disclosures is positively associated with the permissibility of anonymous reporting and organizational support for whistle blowing. This is a direct link towards the control environment, which should – when functioning effectively – support a culture in which speaking up is allowed and supported without a fear of retaliation.

Monitoring activities

Systems of internal control must be monitored though a process that assesses the quality of the system's performance over time. This is accomplished through ongoing monitoring activities or separate evaluations, as defined by COSO. Internal control deficiencies detected through these **monitoring activities** should be evaluated and communicated further, and corrective actions should be taken to ensure the continuous improvement of the system.

The COSO principles are:

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

17. The organization 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.

The evaluation and reporting of internal controls is one of the most frequently occurring themes in existing research on internal controls. Evaluation of internal controls was seen traditionally as part of the auditing process (see, e.g., Simons 1995), but today management is also paying increasing attention to it (see, e.g., Mock, Sun, Srivastava and Vasarhelyi 2009). This is natural, as the ultimate responsibility for the system of internal control lies within management.

The assessment of internal control is a result of testing the effectiveness of the controls and of the auditor's professional judgment. After the establishment of SOX, the assessment is no longer performed only by internal or external auditors, but is also performed by corporate management, because section 404 of SOX requires

annual companies' reports to include management's assessment of the effectiveness of their internal controls and procedures for financial reporting. The annual report must report all material weaknesses discovered during the assessments. In addition to the management assessment of internal control, all managers within an organization should take seriously their management oversight role. This means that managers should not only rely on the technical controls to provide safeguards, but they should also oversee their subordinates' transactions themselves. More importantly, they should also lead by example to set the standards of social control.

Both qualitative and quantitative methods exist for evaluating internal controls. In addition to the quantitative methods such as statistical analysis, auditors have also adopted qualitative methods for evaluation purposes, such as questionnaires, checklists, flow charts, and tests of transactions (Mock et al. 2009, 66). Different methods for documenting internal control evidence, such as narratives, checklists, questionnaires or flowcharts, may emphasize different aspects of the system of internal control (Bierstaker 2003; 91) and should be used in addition to transactional tests. However, auditors are often reminded not to solely rely on standardized checklists when evaluating internal controls to avoid "check the box mentality" (Bierstaker & Thibodeau 2006, 878).

Monitoring activities should provide management information on whether the internal controls are functioning as they should. Companies exposed to fraud have often been associated with inadequate internal controls (Fagerberg 2008, 58). Opportunity-related reasons for committing fraud include insufficient controls, external collaboration, management override, internal collaboration, anonymity within the company and foreign business customers (Fagerberg 2008, 45). Signs of weak internal controls include lack of integrity and ignoring ethical values, a weak control environment, failure to link top-level objectives with objectives for the operating and support units, poor communication within the organization and an inability to understand and react to changing conditions (Fagerberg 2008, 46). Often only the awareness of the internal controls being in place in the organization reduces the risk of someone committing fraud. In other words, personnel are less likely to conduct any suspicious behavior when they know that somebody is watching (Wells 2002).

O'Leary, Iselin and Sharma (2006) suggest that a weakness in the control environment elements appears to have the most significant effect on overall evaluation of internal control, as that impacts upon evaluations of all other elements as well. The traditional view of auditing has been to ensure the effectiveness of the controls over financial accounting, so a risk exists of ending up in a false conclusion on the overall effectiveness of internal control when the evaluation of the control environment is neglected. This is why, again, the need for including social control within the scope of internal control is essential.

Reflection

Simons' (1995, 181) limited view of internal control sees internal controls as being focused on ensuring that accounting records and information systems are reliable. COSO's (2013) wider definition considers many other organizational measures to be part of systems of internal control, too. For example, whereas Simons (1995, 42) lists codes of conduct as being the most basic forms of boundary systems, COSO (2013) sees the code of conduct, tone at the top and the commitment to ethical standards as being the basic foundation for internal control. Merchant and Van der Stede (2016) view tone at the top as being part of the social controls, whereas they note (see, e.g., 2016, 87) that internal controls are mainly action controls, such as physical or administrative behavioral constraints. However, they do not make a clear distinction on the difference between internal and management controls. In a broad sense, it can be argued that a wide range of organizational measures contribute to internal control as defined by COSO framework. Thus, many features provided by the wider definition of internal control could be viewed as important components of any management control system.

A challenge with this wider definition of internal control is that the boundaries of internal control remain unclear (Maijoor 2000, 105; Spira & Page 2003; Woods 2009, 69). Having said that, it should be emphasized that a crucial element in effective internal control is paying attention to social control. Several accounting fraud cases suggest that leadership has a strong impact on unethical financial reporting (see, e.g., Mihajlov & Miller 2012; Tourish & Vatcha 2005). Patelli and Pedrini (2015, 3) argue that its leaders instill ethical attentiveness throughout an organization. Hence, leadership traits can craft an environment characterized by either integrity or unethical practices. By analyzing the language used in CEO letters and financial reporting aggressiveness, Patelli and Pedrini (2015, 3) tested whether specific leadership traits are associated with unethical accounting practices. They found that aggressive financial reporting is positively associated with CEO letters using language that is resolute, complex, and not engaging. This empirical finding highlights the importance of the role of tone at the top in influencing accounting practices, providing more support for the idea that social control matters.

Rae and Subramaniam (2008, 104) argue that the quality of internal control procedures has a moderating effect on the relationship between perceptions of organizational justice and employee fraud. Furthermore, they claim that internal control procedure quality is significantly and positively related to three key organizational factors: the corporate ethical environment, the extent of risk management training of staff, and the internal audit activity level. The study by Ziegenfuss (2001, 322) also corroborates the claim that the strength of an organization's internal control structure and, principally, its control environment is negatively related to its incidence of fraud. This means that the technical controls

performed by the accounting professionals (Simons 1995) are not enough to prevent fraud but that we should also pay attention to the control environment and training of the employees outside the finance and accounting departments.

2.2.3 Conceptualizing internal control in this study

The five internal control components based on COSO are tightly interrelated and are essential for achieving an effective system of internal control. Understanding these components and the relations among them is one of the most important considerations in the framework (Ramos 2004, 30). However, prior research has mainly focused on examining only particular elements of COSO, such as the control environment (D'Aquila 1998; Patelli & Pedrini 2015; Ziegenfuss 2001), control activities (Barra 2010), communication (Hooks, Kaplan and Schultz 1994) or risk assessment (Mills 1997). So far only a few studies have considered all five components of internal control (see Stringer & Carey 2002 and Jokipii 2006).

An effective system of internal control builds on the combination of all the five interrelated components, so it is important to conduct more studies that take into consideration all the five components and interactions among them. This study will address this gap and consider internal control from the comprehensive view (c.f. Arwinge 2010; Pfister 2009). This means that we recognize that internal control is not just about manual checks and procedures, such as fulfilling required manuals and forms. Equally important, it is also about how people conduct internal control – how they design, implement, maintain and monitor control as part of their day-to-day activities (c.f. Pfister 2009, 22). Most importantly, if the social controls do not the support the idea of the technical controls, it is more likely that the controls will not provide the intended benefits, such as helping to meet the operations, reporting and compliance objectives.

Table 5 summarizes the key differences between the limited and comprehensive views of internal control, which this chapter covered and discussed comprehensively earlier. Though internal controls and its different components have been in the scope of various studies as earlier described, the uniqueness of this study is to address the concept of internal control through this comprehensive view and via in-depth case study and to acknowledge the interrelations between the technical and social components of internal control.

Table 5.   Summary of the limited and comprehensive views of internal control

COMPONENTS OF INTERNAL CONTROL	LIMITED VIEW OF INTERNAL CONTROL	COMPREHENSIVE VIEW OF INTERNAL CONTROL
CONTROL ENVIRONMENT	Active audit committee and defined levels of authorizations represent the structural safeguards on internal control. Internal control relies on staff professionals, such as trained accountants.	In addition to formal structures, such as an audit committee, informal structures (i.e., how managers act and talk) are needed. The tone at the top that supports integrity and ethical values is the foundation for an effective internal control system. Instead of relying only on finance and control professionals, internal control is about demonstrating commitment to a competent workforce in all key positions. All people within an organization should be held accountable for internal control.
RISK ASSESSMENT	Internal controls are the primary means for detecting and preventing the risk of fraud and errors.	Internal control is about managing any risk related to operational, reporting and compliance objectives, including the risk of fraud and errors.
CONTROL ACTIVITIES	Internal control is primarily related to financial controls, controls that are in place to safeguard assets and ensure financial reporting quality, such as segregation of duties, restricted access to assets and account reconciliations.	Control activities do not only relate to financial controls but should be viewed as covering any of the business processes, which are applicable to all employees.
INFORMATION AND COMMUNICATION	System safeguards include adequate documentation and audit trail and relevant and timely management reporting. From a financial reporting perspective, financial transactions and other types of information must be accurately recorded and distributed through information systems. Methods and systems used in the company must ensure that financial data and transactions are valid, timely recorded, properly classified, valued and comply with generally accepted accounting standards.	From a broader perspective, methods and systems used should also enable managers and staff to understand and execute other internal control components than accounting controls. Information must be identified, captured, distributed and used in the organization so that people are able to complete their internal control responsibilities. Thus, various types of internal information systems and reporting methods should support the understanding of processes, controls, tasks and individual responsibilities. The control training should focus not only on the accounting and audit profession but also on any business process owners and persons responsible for performing controls.
MONITORING ACTIVITIES	The internal audit function evaluates the controls installed and maintained by the trained accountants.	Separate evaluation of controls is not only the job of an audit function; managers should also consider other evaluations. In addition to separate audits, internal controls should be monitored continuously.

To summarize, internal control must be addressed from the comprehensive view to profoundly understand the interrelations within the different aspects of control. Internal control is not just about technical control, such as checks and balances to ensure the integrity of the reported data, nor it is just a job of the finance and accounting department. Internal control is a responsibility of all employees within an organization, especially the managers. A risk exists of underestimating the role of the social part of the control, which deals largely with the organizational culture, by looking at internal control purely from the accounting controls and safeguard perspective. According to Pfister (2009, 22), organizational culture represents the common understanding among organizational members on how controls must be performed in an organizational setting. Thus, to study internal control, we must understand not only the technical part of the control, but also the social context where the technical controls are supposed to be performed by the employees. Looking at these two elements – social and technical controls - and their interrelations will provide a fresh and holistic perspective to study internal control.

2.3 The relationship between internal control and management control

COSO more or less takes into account all of the different elements of control. Thus, the wider definition of internal control overlaps in many ways with the general definition of management control (see, e.g., Chenhall 2003; Eisenhardt 1985; Langfield-Smith 1997; Otley 1994, 1999, 2003, 2008; Ouchi 1979, 1980; Simons 1990, 1991, 1995). However, internal control has many features that distinguishes it from the general management control definition (Arwinge 2010, 111).

One of these features is the strong focus on the corporate governance perspective in which internal control is regarded as a fundamental defense mechanism against downside risk (see Rae & Subramaniam 2008, 106). Thus, internal control holds an explicit relationship to risk: Internal control forms part of a formal system of risk responses to ensure that risk is effectively treated (Arwinge 2014, 34). Internal control specifically aims to manage the risks involved in achieving the objectives related to efficiency and effectiveness of operations, financial and non-financial reporting and compliance with laws and regulations (COSO 2013).

One of the core features of internal control is also the concept of reasonable assurance (Pfister 2009, 30). Due to their inherent limitations, internal controls may only provide reasonable assurance and not absolute assurance. Flaws in the design, implementation and maintenance of controls generally lead to a risk, which can never be eliminated, simply because no perfect control systems exist. People in charge can make errors or commit fraud, and they must consider relative cost and benefit when designing and executing internal control (Pfister 2009, 30).

Lastly, internal control differs from management control because it is not about management decisions itself. A useful way to address this is the illustration provided by Pfister (2009, 24) which demonstrates the interrelation of strategic control, management control and internal control based on Simons' original model (see Figure 5). However, what's worth noticing is that this figure relies on the limited view of IC, isolating IC from management control.
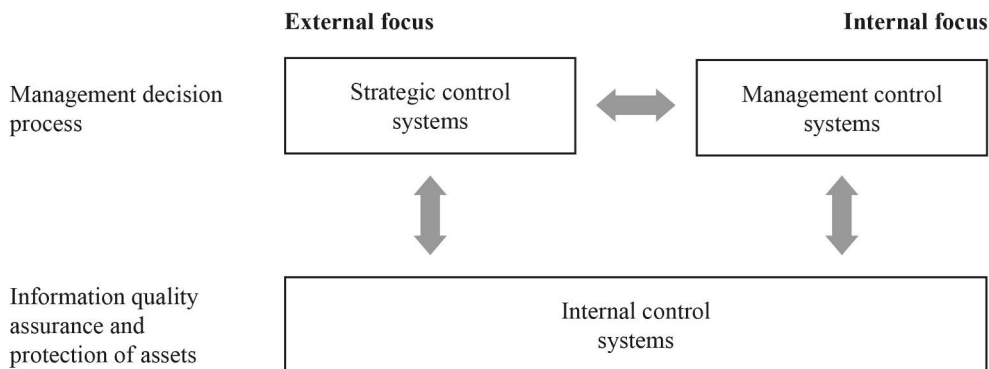
Figure 5. Interrelation of strategic control, management control and internal control, based on the limited view of IC. Pfister (2009, 23), adapted from Simons (1995, 128)

According to Pfister's (2009, 23-24) illustration, internal control is shown at the bottom of the figure as the foundation of all other control systems. Internal control provides reasonable assurance that information on which any system in the organization builds is reliable and that assets are being protected. The information quality provided by internal control enters into strategic and management control systems and builds the foundation for any formal and informal strategic and management control decision. As such, internal control, management control and strategic control interrelate (gray arrows in figure 5). This idea is built on the basis of Simons' limited view for internal control, which separates strategic control, management control and internal control into isolated boxes. Based on the comprehensive view for internal control (Chapter 2.2.2), the boxes for management control and internal controls should not only interrelate, but remarkably overlap, as many organizational controls can be put under both of these definitions. With the comprehensive view, the definition for internal control also goes beyond the information quality assurance and protection of assets. Balakrishnan, Matsumura and Ramamoorti (2019) identified areas in which the generally known internal

control, risk management and management control frameworks[13] overlap. Their analysis showed that the internal control and risk management frameworks are largely overlapping with management control frameworks and their use promotes an integrated view of organizational control and aids assessment of the efficacy of a firm's control over its strategic and operational processes. Their view supports the idea that internal controls should not be viewed only through the controls over financial reporting, but also as a way to achieve organizational objectives that go beyond compliance.

Management decision processes are part of strategic control and management control. According to Merchant and Van der Stede (2016, 8), strategic management control involves managers addressing questions such as "is our strategy still valid, and if not, how it should be changed?". Management control focuses on execution and involves addressing the general questions, such as "are our employees likely to behave appropriately?". Whereas strategic management control deals with issues external to the organization (they examine industry and their organization's place in it), managers addressing management control issues, conversely, have primarily an internal focus: They reflect on how they can influence their employees' behaviors' in desired ways (Merchant & Van der Stede 2016, 9).

Different aspects of internal control are similarly discussed in strategic and management control. Internal control provides organizational decision makers with information so they can choose among alternatives that are best for the achievement of their organizational objectives. For example, a due diligence check of a new sales agent (example of an internal control) can provide supporting information for management on the potential risks involved with this particular agent. However, it is a management decision whether to enter the business relationship with this agent or not. In other words, internal control cannot prevent the taking of strategic and operational decisions that are, in retrospect, incorrect (CoCo 1995, 5). Thus, management's decisions to act and what actions to take are outside of internal control.

2.4   Sarbanes-Oxley legislation

This study occurs in the context of SOX project implementation. Thus, this chapter introduces the legislation's background and the most important provisions of SOX. It will also address the questions that relate to the consequences of SOX, dealing with both its benefits and costs.

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[13]   COSO Internal Control Integrated Framework (2013), COSO Enterprise Risk Management Integrated Framework (2017) and Simons' (1995) Levers of Control Framework

2.4.1   Background of SOX

At the beginning of this century, the world economic system witnessed in monetary terms the largest dollar level of fraud, accounting manipulations and unethical behavior in corporate history (see, e.g., Rockness & Rockness 2005, 31–35). These corporate scandals showed significant internal control failures associated with fraudulent financial statements, which led the regulators to put a major focus on internal control. As a result, the U.S. government established the Sarbanes-Oxley (SOX) Act of 2002. All companies whose securities are listed under the SEC[14] must comply with SOX. In practice this means all of the companies listed in the U.S., including their foreign filers.

The initiators of SOX required significant improvements in the corporate governance and control of public registrants. SOX addresses the duties of the CEO, CFO, and auditors and makes management personally responsible for ensuring the credibility of the financial reporting to stakeholders. Misleading information, when and if discovered, carries stiff penalties for the CEO, CFO, and auditors.

SOX has introduced a number of changes that were to have considerable impact on the accounting profession (see, e.g., Yakhou & Dorweiler 2004). Many practice-led manuals and methods for dealing with the SOX requirements were introduced after the establishment of the legislation (see, e.g., Marchetti 2007; Moeller 2008; Ramos 2008a; Ramos 2008b). While this practice-oriented literature deals with SOX implementation, the academic research has been more focused on the outcomes of SOX, such as firms' going-private decisions in response to the passage of SOX (Engel, Hayes and Wang 2007), financial consequences brought by SOX (see, e.g., Zhang 2005 and Leuz 2007), or the internal control weaknesses reported in financial statements (see, e.g., Canada, Dixon, Sutton and Kuhn 2009; Chan et al. 2009; Doyle, Ge and McVay 2007).

The next subchapters will provide a brief account of the Act's internal control requirements.

2.4.2   Corporate responsibility for financial reports

Section 302 of SOX requires that CEOs and CFOs personally certify the accuracy of financial statements and disclosures in the periodic reports and that those statements fairly present in all material aspects the results of operations and financial condition of the company. Furthermore, the executives must certify that financial controls and procedures have been implemented and evaluated and that any changes to the system of internal control since the previous quarter have been noted.

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[14]   U.S. Securities and Exchange Commission

Section 906 of SOX requires CEOs and CFOs to sign and certify the report containing financial statements; they must confirm that the document complies with SEC reporting requirements and fairly represents the company's financial condition and results. Willful failure to comply with this requirement can result in fines of up to $5 million and imprisonment for up to 20 years.

2.4.3 Management assessment and auditor attestation requirements

Section 404 of SOX deals with management's assessment of the entity's internal control over financial reporting[15] (ICOFR). It requires each organization's annual report to contain an 'internal control report' that should include the following:

- a statement acknowledging responsibility for establishing and maintaining adequate internal control over financial reporting

- a statement identifying the internal-control framework used to evaluate the effectiveness of internal control over financial reporting

- an assessment of the effectiveness of the company's internal control over financial reporting as of the end of the most recent fiscal year

- disclosure of any material weaknesses[16] in the company's internal control over financial reporting (if any material weaknesses exist, then internal control over financial reporting is deemed ineffective)

- a statement that the independent auditor has issued a report on the company's assessment of internal control over financial reporting.

Section 404 prescribes that the external auditors are required to assess and report on both management's assessment of the ICOFR and the operating effectiveness of the ICOFR. This attestation is required to be in accordance with the standards for attestation engagements issued by the PCAOB[17]. The auditor's report must include the disclosure of any material internal control weaknesses and any procedures and corrective actions taken regarding the weaknesses. When one or more material internal control weaknesses exist, the auditor is required to issue an adverse opinion on the effectiveness of internal controls.

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[15] Thus, excluding controls related to other internal control objectives.
[16] A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis." (PCAOB 2007).
[17] Public Company Accounting Oversight Board is a private, nonprofit corporation created by the Sarbanes-Oxley Act of 2002 to oversee the auditors of public companies.

The management assessment and auditor attestation have brought rather extensive requirements for companies. They have really put the spotlight on the company's systems of internal control and whether or not those systems were operating effectively (Arwinge 2010, 89). In practice the implementation of SOX requirements has meant that companies have had to identify, document and assess their systems of internal control. As a result, the evaluation process has led to improvements in technical controls such as reconciliations and segregation of duties (Rittenberg & Miller 2005). For most companies this has been a major program, because previously the internal controls and related processes may have not been adequately documented or evaluated. Furthermore, although requirements for firms to maintain adequate systems of internal control date back to the Foreign Corrupt Practices Act of 1977, not until the establishment of SOX Section 404 has the disclosure of material internal control weaknesses in the annual report been a mandatory requirement for publicly traded firms.

Implementing provisions of Section 404 has also dramatically increased the time and amount of work it takes to complete an external audit (Jiang, Rupley and Wu 2010, 41). Not only do public companies pay high prices for audits, but they also must purchase or create internal control software, create an internal control plan and track and review their internal performance. Penalties for non-compliance can be extensive.

Krishnan and Visvanathan (2007) studied the role of audit committees and auditors in the reporting of internal control deficiencies after the passage of the Sarbanes-Oxley Act. They conclude that a higher number of meetings of the audit committee, lesser proportion of financial experts in the audit committee, and more auditor changes characterize firms that report weaknesses in their internal controls compared to firms with no weaknesses.

The announcement of a material weakness in systems of internal control has been associated with drops in stock price, increased share volume, and even some CFOs losing their jobs (Durfee 2005). Zhang, Zhou and Zhou (2007) argue that firms are more likely to be identified with an internal control term weakness if their audit committees have less financial expertise or, more specifically, have less accounting financial expertise and non-accounting financial expertise. Furthermore, they are also more likely to be identified with an internal control weakness if their auditors are more independent or in case of recent auditor changes. Doyle et al. (2007) suggest that material weaknesses in internal controls are more likely for firms that are smaller, younger, financially weaker, more complex, growing rapidly, and/or undergoing restructuring. These firm-specific characteristics seem to create challenges for companies in maintaining strong internal controls.

2.4.4   The consequences of SOX

The purpose behind SOX was to introduce significant reforms in the corporate governance, accounting, auditing, and reporting environment of publicly traded firms (He & Ho 2011, 624). The most visible and expensive step of SOX has been the requirement for companies to identify and disclose weaknesses in their systems of internal control, as stated in Section 404 (Ockree & Martin 2009, 42). SOX has been argued to be the most significant legislation affecting the U.S. securities markets since 1930s when the Securities Act was established (Banham 2003; Coustan, Leinicke, Rexroad and Ostrosky 2004, 43).

The requirements of Section 404 have had a dramatic impact on the internal control practices of firms worldwide (Ge & McVay 2005; Krishnan, Rama and Zhang 2008; Patterson & Smith 2007; Rittenberg & Miller 2005; Tackett, Wolf and Claypool 2004) and have also generated a substantial amount of research (see DeFond & Francis 2005). However, Heier et al. (2005, 39) have argued that SOX may be simply one of many developments in the evolution of internal control theory and practice that has occurred over the previous century.

Sarbanes-Oxley Act of 2002 has been widely discussed since it was established. The supporters see the Act as a necessary reaction to gain the public trust in financial reporting. SOX proponents have asserted that increased disclosure requirements and stiffer penalties for corporate malfeasance will lead to greater transparency, and thus create gains for investors (Engel et al. 2007, 117).

Opponents argue instead that SOX imposes substantial compliance costs and unduly raises the cost of being a public entity, which harms the competitiveness of U.S. capital markets (Ball 2009; Engel et al. 2007; Zhang 2007). The critics believe that SOX does more economic damages than it prevents: One of the most criticized issues has been the cost effects of implementing the internal control requirements required by SOX.

Rittenberg and Miller (2005) surveyed the costs and benefits associated with Section 404 work. The results suggest that SOX has brought the following improvements:

- A more engaged control environment with active participation from the board, audit committee and management.

- More thoughtful analysis of monitoring controls.

- More structure to the year-end closing process and recording of journal entries.

- Implementation of anti-fraud controls with defined processes.

- Better understanding of the risks associated with general computer controls.

- Improved documentation of controls and control processes.

- Improved definition of controls, and the relationship of risks and controls. Improvement in audit trail.

- Control concepts more embedded in organizations.

- Re-implementation of basic controls which have been previously eroded.

Many studies also focus on the stock market's reactions to the internal control certification reports required by SOX, such as disclosure of internal control deficiencies or management certification of internal control efficiency (see, e.g., Hammersley et al. 2008; Kim & Park 2009; Li, Pincus and Rego 2008; Litvak 2007; Ockree & Martin 2009; Zhang 2007).

The investors' reactions have also been studied under the internal control reporting (ICR) requirements imposed by SOX. Zolnor (2009) argues that US investors continue to invest in foreign markets despite the fact that those markets maintain less demanding ICR requirements than those required by Section 404. Moreover, investors do not respond negatively to Section 404 disclosures. Zolnor (2009) believes that Section 404 does not provide useful information to investors. According to him, considering Section 404's ineffectiveness and the burdensome costs it imposes on reporting companies, it is clear that Section 404 is an example of over-regulation and should be repealed.

Critics suggest that the costs of complying with SOX requirements will dwarf the benefits for smaller companies (Engel, Hayes and Wang 2004, 117). For example, Section 404's requirements are designed to apply to all public companies, regardless of their size. Many negative impacts occur as a result. Kamar, Pinar and Talley (2008), for example, found that compliance costs are so high that it induced many small firms to exit the public market during the year after its enactment. Engel et al. (2007) argue that firms go private in response to SOX only if the SOX-imposed costs to the firm exceed the SOX-induced benefits to shareholders, and this difference swamps the net benefit of being a public firm prior to the passage of SOX.

To summarize the cost and benefits of SOX: Both the opponents and critics of the legislation have well-grounded arguments. SOX has been proven to increase the transparency and oversight over public firms' internal controls, but it also has imposed larger costs on them. But is the legislation's effectiveness unquestionable?

2.4.5   Relevance of SOX in this study

SOX provides an interesting context to study internal control. In Nokia, it was the force that triggered the systematic development of internal control system. But does the implementation of SOX result in more effective internal control? If companies comply with SOX only superficially, the expensive internal control mechanisms may

not necessarily bring substantial improvement to the effectiveness of the corporate governance system. For example, Sonnenfeld (2002) pointed out that Enron had appropriate financial competences and expertise on its board and its audit committee. In other words, the board and its audit committee met all the standards but were still unable to prevent the massive accounting fraud. Similarly, Forster, Loughran and McDonald (2009) found that the code of ethics and code of conducts are essentially identical in many S&P 500 companies. Is this the result of the fact that the requirement of disclosing a code of ethics may only induce superficial adoption of the code, while it may not achieve its desired result of promoting ethical behavior by publicly traded firms? Thus, if a company makes only nominal changes in its internal control designs but is unwilling to demonstrate the changes in the daily way of working, this expensive compliance may have little effect in controlling managerial malfeasance and safeguarding shareholder interests.

The preceding questions can be answered by looking at the controls from both technical and social perspectives. Technical controls represent the adequate policies and procedures that companies must put in place when designing the system of internal control. However, the social controls are indeed needed to ensure that these controls will be enacted in the daily operations and become embedded in the organizational culture. Without them, the adoption of the technical practices might serve only as a symbolism rather than having any actual effects.

This study aims to learn how can an organization design and implement a system of internal control to comply with SOX. To reach the formal compliance one must create and establish a disciplined technical control system. However, as many recent corporate scandals have taught us, we cannot ignore the role of the social control. This study will consider both of these control types and their interrelations.

2.5 The concepts of technical and social control

2.5.1 Technical controls

Understanding the interrelations between technical and social control is at the core of this study. Thus, in this chapter we will define in more detail these two concepts and their relationship to the comprehensive view on internal control.

Technical controls are based on procedures, policies, rules and standards that specify how tasks are to be performed and how individuals and groups are organized (Malmi & Brown 2008; Simons 1995; Tessier & Otley 2012a). Technical controls are embedded in the technology of work and govern day-to-day activities. These are the more visible, objective components of the control system, and thus, the easiest to research. Also, SOX emphasizes the importance of technical controls, and SOX compliance assessments[18] rely heavily on the results gained from assessing the effectiveness of the technical controls.

Many of the technical controls fall under the definition of Merchant and Van der Stede's (2007, 2016) action controls, such as passwords and expense limits and some personnel controls, such as job descriptions and procedure manuals. Furthermore, as with goal setting, output controls, results controls and cybernetic controls can be classified as technical controls (Alvesson & Kärreman 2004; Macintosh 1994; Merchant & Van der Stede 2007; Tessier & Otley 2012a, 180), since often they are implemented through written procedures (Tessier & Otley 2012a, 180).

Action controls, as defined by Merchant and Van der Stede (2016, 81), aim to ensure that employees perform certain actions known to be beneficial to the organization and that they do not perform certain actions known to be harmful to it. Action controls are the most direct form of management control, because they involve taking steps to ensure that employees act in the organization's best interest by making their actions themselves the focus of control. Action controls take any of four basic forms: behavioral constraints, preaction reviews, action accountability, and redundancy. Most of these action controls fall under Simons' definition of internal control (1995, 181), because they aim to ensure the integrity of data, safeguard assets from theft or accidental loss and ensure reliable accounting records and financial information systems. As such, according to Merchant and Van der Stede's view (2016, 81) internal controls and management controls overlap. This is

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[18] According to SOX, all annual financial reports must include an Internal Control Report stating that management is responsible for an adequate internal control and an assessment by management of the effectiveness of the internal control over financial reporting. Any shortcomings in these controls must also be reported.

different from Simons definition, according to which internal control system is different from management control system.

Behavioral constraints aim to prevent employees from doing things that should not be done. The constraints can be applied physically or administratively. Physical constraints include locks on desks, computer passwords, and limits on access to areas where valuable inventories and sensitive information are kept. Administrative constraints are used to place limits on an employee's ability to perform all or a portion of specific tasks or actions, such as restriction of decision-making authority. Managers at lower organizational levels may be allowed to approve expenditure of up to $1.000, those at higher level up to $5.000, and so on. Another example of administrative constraints is *segregation of duties*, which involves breaking up the task necessary for the accomplishment of certain sensitive duties, thus making it impossible, or more difficult, for one person to complete the entire task on their own. Business critical duties are typically categorized into four types of functions: authorization, custody, record keeping, and reconciliation. In a perfect system, no one person should handle more than one type of function. (Merchant & Van der Stede 2016, 81-83.)

Pre-action reviews involve the scrutiny of the action plans of the employees being controlled. Reviewers can approve or disapprove the proposed actions, ask for modifications, or ask for a more carefully considered plan before granting final approval. (Merchant & Van der Stede 2016, 83.) Planning and budgeting processes are typical examples of pre-action reviews, and they also fall under the definition of internal control.

Action accountability involves holding employees accountable for the actions they take. The implementation of action accountability requires (1) defining what actions are acceptable or unacceptable; (2) communicating those definitions to employees; (3) observing or otherwise tracking what happens; and (4) rewarding good actions or punishing actions that deviate from the acceptable. (Merchant & Van der Stede 2016, 83-84.)

The actions for which employees are to be held accountable can be communicated either administratively or socially. Administrative communication takes the form of work rules, policies, and policies, contract provisions, and company codes of conduct. The importance of the procedures is reinforced through training and examinations. The desired actions can also be communicated in oral form, e.g., face to face format. Sometimes the actions desired are not communicated in written form at all; instead, individuals can be held accountable for their actions that involve professional judgement, i.e., doctors, auditors and lawyers should act "professionally." (Merchant & Van der Stede 2016, 83-84.)

Although action accountability controls are most effective if the desired actions are well communicated, communication is not sufficient by itself to make these

controls effective. The affected individuals must understand what is required and be confident that their actions will be noticed and rewarded or punished. Managers and supervisors are monitoring the actions of an employee to evaluate whether those are acceptable. Internal audit is also examining the evidence about compliance with pre-established action standards. According to Merchant and Van der Stede (2016, 84), action accountability is more implemented with negative enforcements by punishing individuals for non-compliance rather than rewarding compliance. (Merchant & Van der Stede 2016, 83-84.)

Redundancy involves assigning more employees or equipment to a task than is strictly necessary or having backup employees or equipment available. It's classified in action controls, because it increases the possibility that a task will be satisfactorily completed. (Merchant & Van der Stede 2016, 84.)

Results controls (Merchant & Van der Stede 2016) are an indirect form of control, because they do not focus explicitly on the employees' actions. Pay for performance is an example, because it involves rewarding employees for generating good results. The challenge with this type of controls is that they may create greedy and short-termism cultures. Results controls may easily lead into a situation in which the rewards are given to the most talented and hardest working employees. Results controls influence actions, because they cause employees to be concerned about the consequences of their actions.

2.5.2   Social controls

Social controls represent the manageable aspect of organizational culture (Malmi & Brown 2008, Merchant & Van der Stede 2007) and include all the "efforts to persuade people to adapt to certain values, norms and ideas about what is good, important, praiseworthy, etc. in terms of work and organizational life" (Alvesson & Kärreman 2004, 426). Social controls appeal to the emotional, non-rational, affective elements within employees (Ray 1986, 288); they include elements such as values, beliefs, norms and symbols (Alvesson & Kärreman 2004; Simons 1995; Malmi & Brown 2008; Schein 1992).

By acknowledging this non-rational element of social control, this study considers that whether an individual will comply with a control requirement or not is not always a result of a rational decision making. There might be some non-rational elements involved in the decision to comply or not to comply. And these may relate to emotions: It is evident from the literature that positive emotions play a transformational effect, whereas negative emotions have an influential impact upon decision making (Babin & Babin 1996; Bagozzi, Dholakia and Basuroy 2003; Khodayari & Hanzaee 2011; Perugini & Conner 2000; Schlösser, Dunning and Fetchenhauer 2013). These self-conscious emotions and neutralization techniques

(Sykes & Matza 1957) provide evidence of why people do not always act rationally. Understanding how social controls may impact these emotions and neutralizations will help us to understand how employees will perceive the controls and, ultimately, how that might impact on their performance of the control.

The social form of control is based on the assumption that individuals do what is best for the organization either because they are self-directed or because they are influenced by social pressure. Social control is not often consciously designed, because it is often derived from, or is an artifact of the organizational culture. Managers use different ways to encourage and facilitate self-control and social pressure by, for example, applying selection and placement, training, cultural control, group-based rewards, and providing necessary resources (Merchant 1985, 40). Ouchi (1979) argued that in situations in which there is a low ability to measure output and imperfect knowledge of the transformation system, the traditional control measures of output and behavior are no longer sufficient. Social norms can substitute for formal management systems by applying clan control.

The previously described action controls (i.e., technical controls) are commonly used in organizations, but according to Merchant and Van der Stede (2016, 81), they are only feasible when managers know what actions are (un)desirable and have the ability to ensure that the (un)desirable actions (do not) occur. In addition to action controls, Merchant and Van der Stede (2016) have defined **personnel** and **cultural controls**, which are forms of social control. Personnel controls are designed to make it more likely that employees will perform the desired tasks satisfactory *on their own*, because the employees are experienced, honest, hard-working, and derive a sense of self-realization and satisfaction from performing tasks well. Cultural controls exist to shape organizational behavioral norms and to encourage employees to monitor and influence *each other's* behavior. (Merchant & Van der Stede 2016, 81-88.) Cultural controls are designed to encourage mutual monitoring, a powerful form of group pressure on individuals who deviate from group norms and values. According to Merchant and Van der Stede (2016, 90), organizational cultures can be shaped in many ways, both in words and by example.

Personnel controls include selection and replacement, training, job design and providing necessary resources. Employee *selection and replacement* means finding the right people to do a particular job. *Training* is used to increase the likelihood that employees act as expected; it can provide useful information about what actions are expected and how employees should perform their duties. Proper *job design* allows motivated and qualified employees a high probability of success. *Necessary resources* to do a good job may include information, equipment, supplies, staff support, decision aids, or freedom from interruption.

Cultural controls include codes of conduct, group-based rewards, intra-organizational transfers or employee rotation, physical and social arrangements and

tone at the top, which all are enacted to shape organizational culture (Merchant & Van der Stede 2016, 90-94). *Codes of conducts*, codes of ethics, organizational credos or statements of missions and visions are formal, written documents providing broad statements of organizational values, commitments to stakeholders and the ways in which the management would like the organization to function. (Merchant & Van der Stede 2016, 91.) They can take the form of a technical control when they are enacted through a formal employment handbook, training course or employee certification. They are typically embedded into the organizational culture and leadership when applied via social control.

Group rewards are incentives based on collective achievement, which can encourage creating of peer pressure on individual employees to exert themselves for the good of the group. *Intra-organizational transfers* or *employee rotation* help transmit culture by improving the socialization of employees throughout the organization, giving them a better appreciation of the problems faced by different parts of the organization and inhibiting the formation of incompatible goals and perspectives. *Physical arrangements* include office plans, architecture, and interior design, whereas *social arrangements* may include dress codes, institutionalized habits, behaviors and vocabulary (Merchant & Van der Stede 2016, 93). Finally, management can shape the culture by setting a proper *tone at the top*. This tone derives from the words and actions taken by management to demonstrate the expected behavior. Tone at the top is an integral part of the control environment as defined by COSO (2013), forming the foundation for effective internal control.

2.5.3   The relationship of technical and social controls

As just described, managers have at their disposition two types of controls - technical and social (Tessier & Otley 2012a, 180). The degree of formalization of an organization, as defined by Adler and Borys (1996), is based on the proportion of social and technical controls that comprise the control systems. Chenhall and Morris (1995, 487) argue that entrepreneurial organizations are likely to de-emphasize formal accounting control, while conservative entities place a heavier reliance on formal accounting procedures.

While assessing the level of formalization could be done by simply listing what technical and social controls the organization has in place, prior studies suggest that the level of interaction between the two types of control is important and requires more attention. For example, Alvesson and Kärreman (2004) find that social and technical controls are tied rather than being substitutes, as Ouchi (1979, 1980) argued. According to Alvesson and Kärreman (2004), technical controls communicate ideals and have a strong symbolical content (social aspect), but they are also influenced by the organization's beliefs and norms of behavior. Moreover,

Bartunek (1984) describes how social controls influence technical controls, and Abernethy and Chua (1996) suggest that technical controls can help rationalize the social components of the control package.

Thus, it can be concluded that technical and social controls interrelate and should not be considered isolated from each other. For example, the effectiveness of results controls, such as ´pay for performance´, can be dependent on how the social controls are applied in an organization: An organization's culture may either encourage employees to bend the rules to achieve the short term targets, or it can support employees in situations in which doing the right thing could mean fewer profits in the short run. This all depends upon the way the technical controls are introduced to employees by management and how employees perceive them.

This interesting interrelation between technical and social control requires further exploration; thus, it will be at the heart of this study. The objective is to better understand how technical controls, as required by SOX, can be implemented via applying various types of social control within internal control system. By understanding these interrelations, better insights may be gained into why certain internal control implementation projects fail and some succeed.

2.6 Relevant management control frameworks in this study

2.6.1 Background: Simons' Levers of Control Framework

This chapter has already discussed the concepts of control systems and internal control. Next, we will combine these two concepts closer together to analyze how we can study internal control through the lenses of the management control literature. One particularly suitable framework for this purpose is a framework developed by Tessier and Otley (2012a). It is a revised version of the Simons' Levers of Control (LOC) framework (1995), which has been used frequently in the literature over the years with over 4000 citations (Google Scholar 2019).

The LOC framework originally addressed how strategy can be implemented through formal control systems. According to Simons (1995), managers can use four types of control systems, which he calls four levers of control (LOC): belief systems, boundary systems, diagnostic control systems and interactive control systems.

- *A belief system*, as the first lever of control, represents a set of formal definitions of the organizational values, purpose and direction of the organization. These systems are communicated formally through documents such as mission statements and statements of purpose. For example, they address what level of performance is desired and how the

organization wants to create relationships internally and externally. Belief systems are used to inspire and guide the search for new opportunities.

- *A boundary system*, as the second lever of control, sets boundaries for the acceptable domain of activities for organizational members. In contrast to a belief system, a boundary system is used to set limits in the search for new opportunities. Based on the business risks, boundary systems set limits to both business conduct and strategy.

- *A diagnostic control system*, as the third lever of control, is used to motivate, monitor, and reward the achievement of specified goals. Diagnostic controls are the formal systems that managers apply to monitor organizational outcomes and correct deviations from preset standards of performance. They are used to ensure that everything is on track and no surprises will occur.

- *An interactive control system*, as the fourth lever of control, is used to stimulate organizational learning and the emergence of new ideas and strategies. Managers involve themselves regularly and personally in the decision activities of subordinates. By focusing on strategic uncertainties, these formal information systems provide a bottom-up process to identify opportunities and threats.

According to Simons (1995), these four levers of control can work simultaneously to balance the organizational tensions, such as tension between innovation and control, profitability and growth, between the goals of the organization (the manager) and those of the employees, and between the opportunity to create value in a market and the limited amount of time and attention available to managers. These tensions are managed by what Simons calls positive and negative control systems. Managers must understand how these four types of systems should be used and what purpose they serve. For example, while belief systems and interactive control systems rely on the positive and inspirational forces, boundary systems and diagnostic control systems build constraints and ensure compliance. Simons also underlines the importance of explaining the interrelations of control systems: "*The power of the control levers does not lie in how each is used alone but rather in how they complement each other when used together.*"

Simons (1995, 177) suggests that internal control is different from the four basic levers of the control system: This system does not relate directly to strategy formation and implementation but is essential in any business in order to ensure that assets are secure and management information reliable. Without this assurance, managers cannot rely on the control levers. Arwinge (2010, 113) notes that since Simons provided his definition over 20 years ago, the scope of internal control has expanded, and internal control is no longer strictly limited to specific controls over

financial assets and the accounting records but stretches over most of the organizations business processes and objectives. Thus, in the light of the discussion in the chapter 2.2.2., the comprehensive view of internal control in fact overlaps with many of the levers of control by Simons.

The interrelations of Simons' (1995) LOC and COSO Internal Control frameworks were examined by Balakrishnan, Matsumura and Ramamoorti (2019). The researchers mapped the points of focus in the 2013 COSO framework to the principles articulated in the LOC. They were able to identify multiple areas in which the frameworks overlap. They also examined the extent to which the 2017 COSO Enterprise Risk Management (ERM) Framework captures non-overlapping areas between the 2013 COSO and the LOC. They concluded that together COSO IC and ERM covered most of the aspects of LOC. COSO ERM (2004, 2017) Framework highlights the importance of considering risk in both the strategy-setting process and in driving performance, whereas the COSO IC Framework, as an operational tool, does not fully integrate the impact of strategy on controls. Taken together, the IC Framework and the ERM framework appear to span controls in the context of strategic, operational, financial, and compliance objectives and associated contexts. Even so, their analysis shows that the LOC framework provides a complementary and yet broader approach for understanding the linkages among cultural, operational, and strategic controls.

The analysis of Balakrishnan et al. (2019) supports this study's approach: internal controls are not external to the four control levers; instead, these two are strongly overlapping. This promotes an integrated view of organizational control. Thus, it should be acknowledged that the management control frameworks, such as Simons' LOC (1995) or Tessier and Otley (2012a), include many elements of internal control. By understanding the overlap between COSO and LOC, a firm could leverage the IC to implement a strategic control system. Such an expansion means that efforts invested in satisfying SOX requirements are beneficial beyond protecting the company from fraud, financial misreporting, legal liabilities, and misappropriation of assets.

Simons' (1995) framework has many strengths, such as including different types of controls and providing a broad perspective (Ferreira & Otley 2009). However, as Tessier and Otley (2012a, 177) argued, several ambiguities exist regarding the levers of control, mainly due to their vague definitions. Tessier and Otley (2012a) suggest that the interactive controls concept should be divided into strategic performance control systems and the interactive use of controls. Based on this, they suggest that diagnostic and interactive controls should be considered not as control systems as such but rather as descriptions of how controls can be used. Furthermore, they argue that boundary control systems operate at two different organizational levels: strategic boundaries and business conduct boundaries.

Tessier and Otley (2012a, 177) identified two important characteristics of control systems emerging from the analysis of the just-listed ambiguities: objectives of control (performance and compliance) and organizational level (operational and strategic). They also argued that belief and boundary control systems do not operate at the same level of analysis. According to them, beliefs are a type of control that can be used to manage both performance and compliance, whereas boundaries are a group of controls of different types (social/beliefs and technical) that are specifically used to manage compliance. Based on their analyses, Tessier and Otley developed a revised framework for LOC (2012a), introduced in the following chapter.

2.6.2   Overview of the Tessier & Otley framework

Management control literature has been criticized for having ill-defined concepts, causing mixed empirical results and making it difficult to build a coherent body of knowledge. For example, Simons' (1995) Levers of Control, even though being one of the most used frameworks, has been criticized for its vague concept definitions. Based on the ambiguities listed earlier, Tessier and Otley (2012a) addressed this issue by presenting a revised version of Simons' framework that improves on already well-known concepts (e.g., interactive and diagnostic) and explores less studied ones (e.g., positive and negative dimensions of controls).

The revised framework by Tessier and Otley (2012a) explicitly separates managerial intentions for controls and employee perceptions of controls. Managerial intentions comprise three levels: 1) types of controls (social and technical) 2) that are organized as four control systems (strategic performance, operational performance, strategic boundaries and operational boundaries) and 3) that can be used diagnostically or interactively, have an enabling or constraining role and can lead to either reward or punishment. Figure 6 illustrates this framework.
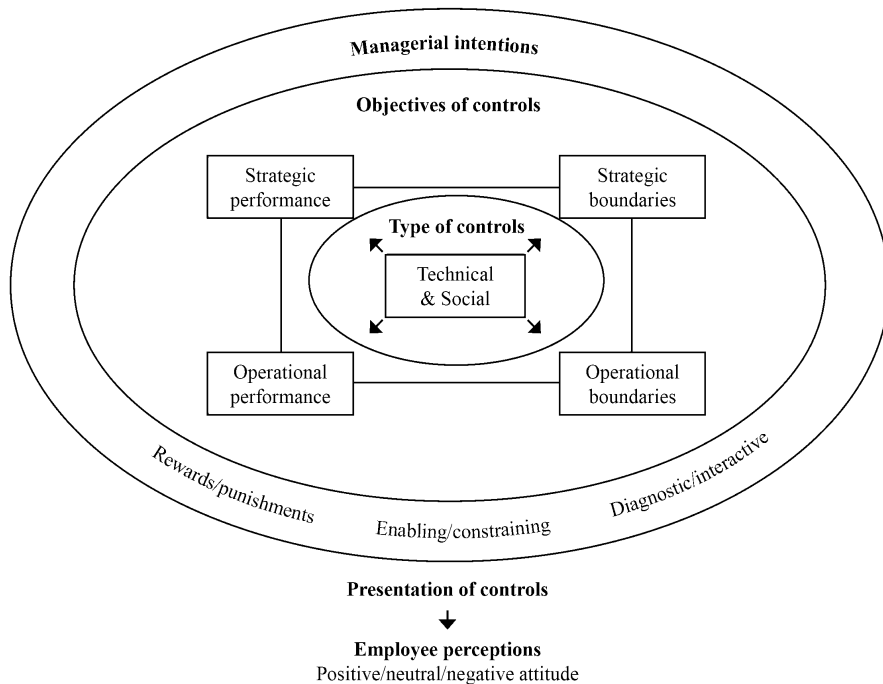
Figure 6. Tessier and Otley's framework (2012a, 173), adapted from Simons' (1995) LOC framework

One criticism of Simons' LOC framework has been that employees are considered to be rather passive actors: For example, Gray (1990, 147) noted already in 1990[19] that 'while he (Simons) acknowledges a role for debate over planning, and budgets, the acceptance of strategic initiatives by middle and lower levels is taken for granted.' Thus, while the LOC framework explicitly takes the point of view of managers and their attempt to manage their control package, it should be also considered how employees contribute to the design of these control systems. Thus, Tessier and Otley (2012a, 182) suggest that the concepts of employee perceptions of controls could be studied to understand what affects employees' perceptions of controls and the impact of these perceptions on organizational performance. Adler and Borys (1996) also called for studies focusing on how controls are perceived. This consideration is extremely relevant in internal control. Employee perceptions on internal control should not be overlooked, as they might have direct impact on how effectively employees will eventually perform the controls.

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[19]   Simons (1990) introduced the early version of this Levers of Control in 1990 in his paper called "The role of management control systems in creating competitive advantage: new perspectives."

According to Tessier and Otley's framework, managers have individual social and technical controls at their disposition that they can use to comprise control systems. These controls are themselves neutral (Tessier & Otley 2012a). Instead, the design of control systems and the way they are presented do influence how controls are perceived by employees. Thus, employee attitudes towards controls can be positive, neutral or negative. Tessier and Otley (2012a, 176) emphasize that employee perceptions of controls must be considered separately, because they could be different from managerial intentions.

Although Tessier and Otley (2012a) illustrated the revised framework with some examples from the field, their study was mostly conceptual and based only on prior literature. This study will use the Tessier & Otley (2012a) framework to explain the interaction between technical and social controls. The next subchapters review the elements of this framework.

2.6.3 Types of controls

Chapter 2.5 described how controls can be classified into *technical and social* controls. This classification is also at the core of this study[20]. This study uses Merchant and Van der Stede's definition (2016) for personnel and cultural control, which together forms a concept definition for social control. These controls include elements such as tone at the top, employee selection and job design, group rewards, informal communication, and social arrangements.

This study's definition of a technical control is that it is based on procedures, policies, rules and standards that specify how tasks are to be performed and how individuals and groups are organized (Malmi & Brown 2008, Tessier & Otley 2012a, Simons 1995). Technical controls are embedded in the technology of work and govern day-to-day activities. These are the more visible, objective components of the control system, and thus, the easiest to research. Many of the technical controls fall under the definition of action controls (Merchant & Van der Stede 2016), such as preaction reviews and behavioral constraints.

Within the context of the case analysis, in this study's scope are the technical controls that are identified as being part of the internal control system at Nokia. Furthermore, the social controls at Nokia are limited to cover only the aspects relevant in terms of introducing those technical controls. Thus, social control *per se*, is not in the interest of this study.

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[20]   Other classifications have also been used in the literature, such as formal and ideological control (Etzioni 1964; Kraus et al. 2017) or technocratic and socio-ideological (Alvesson & Kärreman 2004) controls.

2.6.4   Objectives of controls

The second level of the revised framework comprises different control systems that have a specific objective, incorporating four types of control system: operational boundary, strategic boundary, operational performance and strategic performance control systems. Simons (1995) refers to the operational boundaries also as business conduct boundaries. Management control systems are defined as "systems, rules, practices, values and other activities management put in place in order to direct employee behavior" (Malmi & Brown 2008, 290). As such, the second level is closely related to the first level of the framework, since the latter constitutes the former, i.e., the four control systems are sets of social and technical controls. Figure 6 represents this by the four arrows connecting the two levels.

The boundary systems are based on risks to be avoided, so they are concerned with compliance. The *operational boundary* control system is defined as the sets of controls that inform employees of the limits imposed on their actions (Tessier & Otley 2012a, 180). These sets of controls are concerned with setting limits at organizations' operational level, such as proscribing certain behaviors regarding day-to-day activities, e.g., conflict of interest, fraud and other actions that contravene laws (Tessier & Otley 2012a, 178). These controls are, in fact, very close to the definition of the control activities, as defined by COSO (2013). Operational boundary controls can be communicated through social controls such as values and codes of conduct or through technical controls, such as written rules and procedures. In addition to communicating internal organizational limits, they can also address limits established by the industry or society in which the organization evolves (for more detail, see Simons 1995, 42-47). *Strategic boundaries* are sets of controls that inform employees of the acceptable domain of opportunity seeking at the strategic level (Tessier & Otley 2012a, 180). For example, an organization could use a traffic light system to inform employees whether they should go ahead with a project (green), put the project on hold (yellow) or abandon the project (red). Tessier & Otley (2012a, 180) also gave the example of organizational mottos used as strategic boundaries: an organization used the expression "5-20-100" to inform employees that an initiative will be acceptable if it means the organization will be ranked among the top five of its country, the top 20 in its continent and the top 100 in the world.

The two remaining control systems are concerned with performance. The *operational performance* control system focuses on critical performance variables at an operational level. These controls include, for example, overseeing what the organization must do well to achieve its strategy (Simons 1995). In this sense, they include the feedback systems that Simons included in diagnostic controls. They also include values and organizational symbols that promote organizational performance and procedures such as appraisal processes (Tessier & Otley 2012a, 180).

The *strategic performance* control system focuses on strategic uncertainties, covering the sets of controls that monitor whether the organization has the proper strategy to ensure the attainment of its vision (Tessier & Otley 2012a, 180). Hence, the role of this control system is "to signal the need to review strategies" (Ferreira & Otley 2009, 274). For example, mission statements, i.e., social controls, provide information as to what the strategy should be accomplishing. Strategic performance controls are similar to what Tuomela (2005) describes as strategic performance measurement systems.

Whereas the LOC framework approaches control from the viewpoint of implementing strategy, the COSO IC has more of an operational focus. Thus, the focus of this study is on the operational boundaries and operational performance related control objectives.

2.6.5 Managerial intentions of control

The third level of the framework represents managerial intentions, which refer to what managers are trying to achieve by implementing controls. Managers can make different choices regarding the control systems. They can decide which controls will have the main focus of promoting discussion and learning (*interactive use*) and which will be looked at only if there is some deviance (*diagnostic use*). Managers can also decide whether the control will be used in a way that promotes creativity (*enabling*) or in a way that ensures predictability (*constraining*). Finally, they can decide what will be the consequences (i.e., *rewards/punishments*) of the achievement (or non-achievement) of performance and compliance requirements. (Tessier & Otley 2012a, 175, 181.)

2.6.6 Presentation of control

Once control systems are designed, managers can decide how to present them. This includes considerations such as which channels to use (face-to-face, e-mail, etc) and the message content itself (information to provide regarding the control, level of language used, etc.) For controls that have more than one objective, the presentation of a control can be different from the overall intention, meaning that the presentation of a control may focus on only one of these purposes rather than on all of them. This divergence between intention and presentation, which in turn influences perception, could be intentional by managers to retain some level of flexibility as to how they use controls. (Tessier & Otley 2012a, 181.)

Presentation acts as a bridge between managerial intentions and employee perceptions and can influence how controls are perceived. Tessier and Otley (2012a, 175) used the following example to demonstrate this: "Total Quality Management

programmes and SOX compliance programmes are composed of similar controls such as flow charts and exception reports. Yet, because these two control programmes are presented differently and in different contexts, the former is seen as a way to improve performance (Adler & Borys 1996) while the latter is seen as a way to ensure compliance to laws." Thus, managers can use judgement on how they present the controls to achieve the desired employee perception.

2.6.7   Employee perceptions of controls

Tessier and Otley (2012a, 175) suggest that the past literature has failed to acknowledge the difference between managerial intentions for controls and employee perceptions of controls. Managerial intentions refer to what managers are trying to achieve by implementing a control, and thus are a design attribute of a control system. Employee perceptions, however, refers to employees' interpretation of what the control is for and, therefore, is not a design attribute of the management control system.

Thus, the design of control systems and the way they are presented influence how controls are perceived by the employees (this is represented by an arrow in Figure 6). In other words, employees have emotional responses to controls. For example, Merchant and Van der Stede (2016, 194) argue that controls such as pre-action reviews can produce *negative* attitudes. Adler and Borys argue that employee attitudes are *positive* when formalization enables them "to better master their tasks" and will be negative when it "functions as a means by which management attempts to coerce employees' effort and compliance" (1996, 61). Adler and Chen (2011) discuss employees' positive and negative evaluative responses (or affect) to controls. However, there is also the possibility that the attitudes are *neutral*, in other words that the employee has neither a positive nor a negative attitude towards the control. Thus, the Tessier and Otley framework suggests that employee perceptions of controls will determine their attitudes towards controls, i.e., whether the attitude is positive, neutral or negative. The framework emphasizes the fact that managers and employees might not appraise controls in the same way. (Tessier & Otley 2012a, 181.)

Tessier and Otley's (2012a, 175) illustrated the perception of controls based on their examples from the field as follows: "Newly implemented SOX-related controls were generally perceived as restrictive since their main purpose was to prevent fraud and therefore to protect value. However, some employees explained that knowing someone else would review their work encouraged them to be more conscientious. Furthermore, controls implemented in the organisation that already had many procedural controls were generally perceived more positively than those implemented in the organisation that had less in place. Finally, controls implemented

in departments accustomed to them (e.g. R&D[21]) were perceived more positively than controls implemented in departments with less (e.g. marketing)."

In addition to the design and presentation of controls, employees' individual attributes, such as the socio-cultural environment in which they evolve, also play a role in the perception of controls, as well as the level of knowledge employees have regarding controls (Berlo 1960).

Tessier and Otley (2012a, 182) conclude that, while the concepts of employee perceptions of controls and employee attitudes towards controls are considered important and are mentioned as separate elements in their revised framework, they are not explored in any depth, because they are not the main focus of their paper. Thus, they suggest that potential avenues exist for further research to study what affects employee perceptions of controls and the impact of these perceptions on organizational performance. Adler and Borys (1996) also called for studies focusing on variability in how controls are perceived.

According to Tessier and Otley (2012a, 182), perceptions of and attitudes towards controls could also be investigated in light of the literature on employees' participation. Multiple studies in the budget literature have suggested that participation affects attitude and motivation (see the summary of these studies by Shields and Shields (1998)). Participation in the design of other types of control might also have an impact on attitude, as suggested by Adler and Borys (1996).

2.7 Use and development of concepts and frameworks in this study

This study attempts to identify and examine how a system of internal control is designed and implemented in the context of a SOX compliance program. This study's objective is twofold and can be scrutinized through the following questions:

RQ1   How do social and technical control interplay in the design and implementation of an internal control system?

RQ2   How does the presentation of internal controls impact employee perceptions and performance of internal controls?

The following theoretical concepts and frameworks are used to answer these questions:

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[21]   For example, R&D departments have to follow strict procedures to ensure health and safety.

1. *Internal control* is defined with the comprehensive view, as explained in chapter 2.2.2. It is recognized that the concept of internal control overlaps with the concept of management control, and many organizational aspects can be classified into both of these control systems. However, this study also recognizes the differences between these concepts, as explained in Chapter 2.3. The empirical analysis uses the COSO internal control framework of 2013 to classify the internal control components.

2. *Internal control system* consists of a set of technical and social controls. The following definitions are used to address the interplay between *technical and social control*: Technical controls are based on procedures, policies, rules and standards that specify how tasks are to be performed and how individuals and groups are organized (Malmi & Brown 2008, Tessier & Otley 2012a). Social controls consist of the personnel and cultural controls, as defined by Merchant and Van der Stede (2016). These are explained in more detail in Chapter 2.5.2.

3. The framework by Tessier and Otley (2012a) is used as to explain how the internal controls are designed and implemented. This framework was introduced in chapters 2.6.2 – 2.6.7 and it will be further refined at the end of this this study.

These concepts and frameworks are summarized in Figure 7 and will be addressed as follows: At the core (first layer) of the framework are the individual controls available to managers (types of controls). Managers have at their disposition two types of controls: social and technical controls. Social controls appeal "to the emotional, non-rational, affective elements within employees" (Ray 1986, 288), are constituted of core values, beliefs, norms (Alvesson & Kärreman 2004; Simons 1995) and symbols (Malmi & Brown 2008; Schein 1992). As Scott (2001) explains, although cultural symbols are internalized and subjective, external symbols, such as cultural artifacts, are observable. Hence, social controls represent the manageable aspect of organizational culture (Malmi & Brown 2008; Merchant & Van der Stede 2003). Technical controls specify how tasks are to be performed (Perrow 1986) and how individuals and groups are organized (Malmi & Brown 2008). They are based on rules, procedures and standards and govern day-to-day activities. The degree of formalization of an organization, as defined by Adler and Borys (1996), is based on the proportion of social and technical controls that comprise the control systems.

According to Chenhall and Morris (1995, 487), entrepreneurial organizations are likely to de-emphasize formal accounting controls, while conservative entities place a heavier reliance on formal accounting controls. While it is possible to simply list the technical and social controls that an organization has put in place to assess the level of formalization of an internal control system, prior studies suggest that the

level of interaction between the two types of control is important and requires more attention. Alvesson and Kärreman (2004) suggest that social and technical controls are tied rather than being substitutes, as Ouchi (1979, 1980) suggested. Abernethy and Chua (1996) find that technical controls can help rationalize social components of the control package, while Bartunek (1984) describes how social controls influence technical controls. Both technical and social aspects of internal control design will be considered in the empirical analysis and analyze how they are interlinked. Theoretical concepts for internal control will be drawn from the recent comprehensive study around internal control and from the practical literature (COSO 2013). In the applied framework, the individual components of IC are in the first layer and those can be classified into technical and social controls. Thus, the first layer is labelled as internal control components.

The second layer of the framework (objectives of controls) constitute the internal control system, which is closely related to the first layer of the framework, since the latter constitutes the former; the internal control system is formed out of a set of social and technical controls. These controls may have performance or compliance objectives.

The third layer of the framework (managerial intentions) represents managerial intentions. Choices included in managerial intentions are applicable to each control within the internal control system. These three layers together formulates internal control design, as illustrated in the framework.

The second part of the framework is about the internal control implementation. Once the internal control system is designed, managers can decide how to present the controls. Decisions as to how to communicate with employees must be made, such as the channels used and the message content itself (Berlo 1960). As Tessier and Otley (2012a) emphasize, the presentation of a control can be different from the overall intention. This divergence between intention and presentation, which in turn influences perception, can be intentional by managers to retain some level of flexibility as to how they use controls.

The design of control systems and the presentation of controls represent the elements of the framework that managers have an influence on. In addition, the framework includes employee perceptions, which are external to the design and presentation of the control system. While the design of control systems and the way they are presented do influence how controls are perceived, employees' individual attributes, such as the level of knowledge they have regarding controls, also play a role. Finally, perception of controls will determine employee attitudes towards controls, i.e., whether the attitude is positive, neutral or negative. By separating the managerial intention and employee perceptions, we emphasize the fact that these two groups of individuals might not appraise controls in the same way.

The three layers – internal control components (control types), internal control system (objectives) and managerial intentions - form the design of an internal control system and are relevant to the first research question. The remaining part of the framework – presentation and perception - addresses the internal control implementation and is relevant to both of the research questions. To fully answer the second research question, this study will also seek to understand how the presentation of controls impacts the perception and performance of controls by the employees.
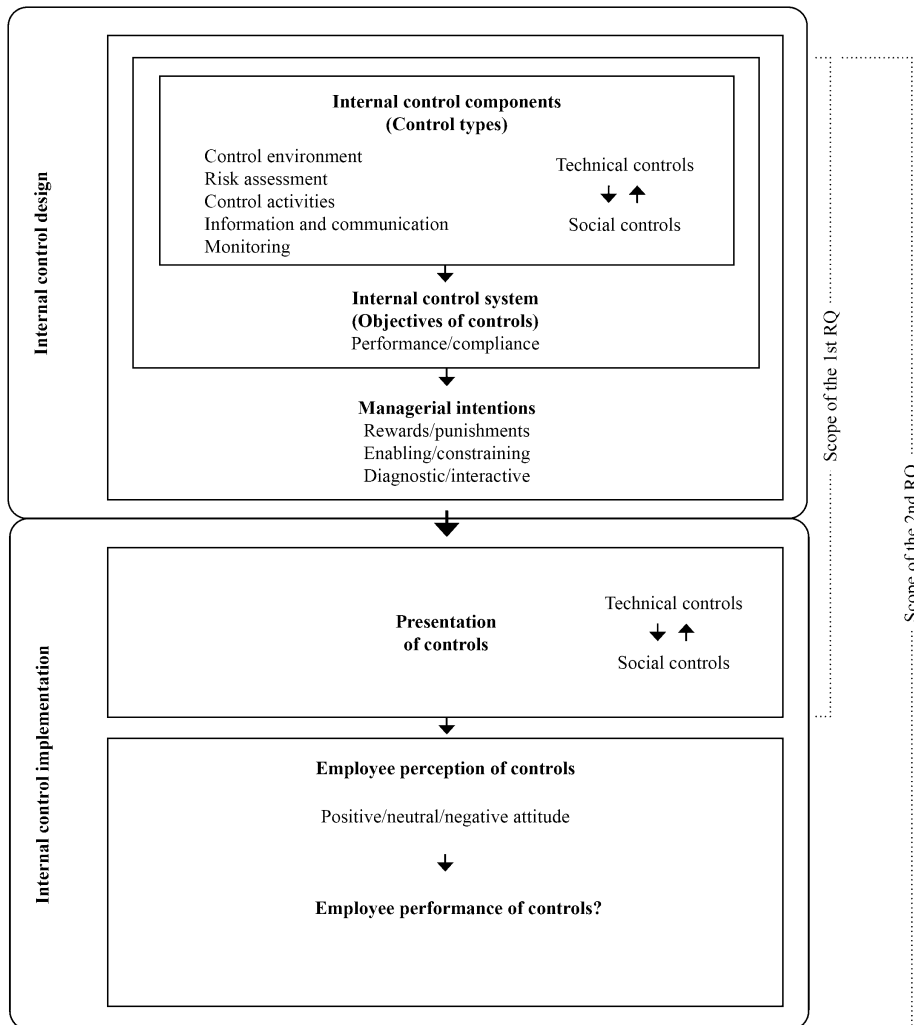
Figure 7. Framework used in this study and the scope of research questions. (Based on the frameworks by Simons (1995), Tessier and Otley (2012a) and COSO (2013))

Although there is some existing literature focusing on both technical and social controls (see, e.g., Abernethy & Stoelwinder 1995; Alvesson & Kärreman 2004; Ditillo 2004), there is still a clear motivation for conducting a further study with a holistic perspective on control systems. This study will include both technical and social controls in the scope of its empirical analysis by utilizing the Tessier and Otley (2012a) framework to guide and frame the empirical analysis. The study will help us to gain a better understanding of how the control system functions as a whole and how the different elements of control interact by looking at the internal controls system holistically, instead of focusing only on certain aspects of control. While discussing the case study findings in chapter 3.3, the aim is to further develop the Tessier and Otley (2012a) framework to demonstrate how it can be applied in the context of internal control design and implementation.

3 Design and implementation of a system of IC – empirical study

3.1 SOX compliance program at Nokia

3.1.1 Establishing the SOX compliance program

Nokia is listed in the New York Stock Exchange. This means that it has been obligated to comply with the SOX legislation starting from fiscal year of 2006. The SOX implementation work was initiated in 2005 in one of the sub-teams in the accounting function, aiming to implement the internal control requirements brought by SOX globally. The initial idea was that everyone should be involved in the work and do their own part, because everyone is responsible. Thus, the implementation work started in all parts of the organization without central oversight. However, there was no clear vision of how the implementation work should be done and soon the project team realized that it needed stronger support from the HQ and top management.

Following this decision, a team of top financial executives[22] paid a visit to three US-based technology companies - Dell, Xerox and IBM - to learn how they had carried out the SOX implementation. Nokia wanted to talk to companies it thought could be considered good benchmarks in SOX implementation. The external audit company firm, which was also based in U.S., helped to organize these visits. During the reference visit, Nokia learned that the reference companies had implemented SOX in very heavy manner, using many external resources. After the visit, Nokia had a clear vision that it did not want to use external resources but rather to build the competences in house, and more importantly, ensure that the SOX requirements were implemented in a meaningful manner that would support the business without creating too much bureaucracy.

The US visit was seen as a turning point, when it was decided to switch from a "bottoms up" approach to a central program mode, followed by the establishment of

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[22]   This team included the External Audit Partner, Group Controller and other top financial
       executives.

a central Internal Control organization, reporting directly to the Senior Vice President, Group Controller, who took the lead of the program.

> "One learning is that it (SOX implementation) is better to be done as a company program or project, rather than letting everyone do it themselves within the subunits on their own phase." (Senior Vice President, Group Controller)

> "Nokia typically implements things as projects, and this time there was no project… Typically when you implement something you need to have a centralized approach to do it in Nokia, to get it done properly with cost efficient approach etcetera. So that was the thing that was the initial start, and I think that then the change came after that gig to US." (SOX Program Manager)

It was seen as essential that the understanding of SOX and what it meant for Nokia would be deployed all around the organization and that people would not see it as purely a Finance and Control function's exercise. Furthermore, even though the external auditors and consultants were involved in the beginning, it was clear that the project was aimed to be completed as an in-house, rather than outsourced, project.

> "Our group controller had a very clear vision from very beginning, that really to get the competences, and to get the knowledge into the company, the work must be done by us, and therefore there need to be immediately the organizations involved. That we don't build a competence only to head office, but really to have, and tie in the units to be responsible for things…And then if you think maintaining it for the future, so I think that the global core team is the one together with auditors to maintain the competence, and then deliver always the things when they are changing or whatsoever are coming." (Head of Accounting and Reporting Development)

Top management designated SOX as a top priority. The CEO and CFO acted as key messengers in the SOX- and internal controls-related communications. SOX compliance was also widely adopted into personal incentives in all organizational layers, proving that incentives based on collective achievement encourage cultural control, which is designed to encourage mutual monitoring (Merchant & Van der Stede 2016, 90).

> "I remember when I was starting in Nokia…I got the impression that (Group controller) saw this SOX really important thing, and I think that when the owner

[senior finance & control management] sees something as important so it's the best support." (Internal Control Manager)

"It has to initiate from the top management, otherwise it will be lost behind the bureaucratic and technical execution." (Senior Vice President, Group Controller)

"So really the, the tone from the top was set well at the outset, not only by Group Controller, but by CFO and others in the organization, including the audit committee. People were incented to participate in a positive fashion, and to collaborate, and everybody took it very, very seriously as a consequence. So I think those were very good things, and obviously the effort was ultimately successful." (Partner, External Audit)

As the above quotes demonstrate, the control environment set by the Nokia management was strong since the beginning of the SOX program. The tone at the top, commitment to competence and holding people accountable for internal controls – which all are elements of a control environment (COSO 2013) – were all very clearly communicated both in talk and action.

3.1.2   What changed in terms of internal control?

Every company has internal controls in place, no matter whether they must follow SOX or not. This was the case with Nokia, too. Table 6 compares the different elements of internal control prior and after SOX, using Simons' (1995, 84-85) definition[23] for internal control in order to illustrate how the existing internal controls in fact changed. "Before SOX" column characterizes the internal controls which were in place by 2004, when SOX program was kicked-off. "After SOX" column illustrates the key changes implemented during 2004-2008, when most of the internal control development work took place.

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[23]   See Figure 3.

Table 6. Internal controls before and after SOX in Nokia (according to Simons' (1995, 84-85) definition of internal control)

ELEMENT OF INTERNAL CONTROL	BEFORE SOX (->2003)	AFTER SOX (KEY ACTIVITIES DURING 2004-2007)
ACTIVE AUDIT COMMITTEE	Audit Committee existed already before SOX	Audit Committee was added with the responsibility for overseeing the SOX Program.
INDEPENDENT INTERNAL AUDIT FUNCTION	There was no Internal Audit in the early 2000s. It had existed in 1990s but was mainly focusing on fraud investigation at that time.	New Internal Audit function was established in 2006.
SEGREGATION OF DUTIES	Segregation of duties was missing in many functions, and those were not carefully designed and integrated in the SAP. Especially in the smaller local subunits there were no systematic compensating controls in place, either, to mitigate the dangerous job combinations.	Conflicting duties were defined in SAP authorizations, and mitigating actions were implemented and monitored where conflicts existed. Many of the conflicts were mitigated by centralizing certain tasks (such as creating purchase orders) to avoid local units to have too wide authorizations.
DEFINED LEVELS OF AUTHORIZATION	Local practices existed for approving expenses, processing purchases and allowing sales discounts. There was no global approval policy, and the authorization levels were not integrated in any systems. Indirect spends (such as consulting, marketing or IT expenditure) were approved as part of the budgeting, after which managers were empowered to spend the company money without additional controls to monitor the spends.	Global approval policy with role-based specified authorization levels were defined and integrated into SAP and purchasing tools. Controls were established to centralize indirect expenditure and enforce approvals in the systems.
RESTRICTED ACCESS TO VALUABLE ASSETS	Valuable assets, such as inventories, were protected with basic controls, such as locks and inventory counts.	The existing controls were enhanced and documented.
ADEQUATE EXPERTISE AND TRAINING FOR ALL ACCOUNTING, CONTROL, AND INTERNAL AUDIT STAFF	Accounting and control personnel had a basic level of expertise and training.	Internal controls were trained across the company to a much wider audience than just accounting and control personnel. SOX testing also provided on-the-job learning and sharing best practices across units. The ownership of controls and responsibilities to execute internal controls expanded from accounting department to all layers of organization.

Table 6. Internal controls before and after SOX in Nokia (according to Simons' (1995, 84-85) definition of internal control) [continued]

ELEMENT OF INTERNAL CONTROL	BEFORE SOX (->2003)	AFTER SOX (KEY ACTIVITIES DURING 2004-2007)
SUFFICIENT RESOURCES	Nokia had a basic level of resources for performing the controls.	The resources for performing controls and testing the controls were increased.
ROTATION IN KEY JOBS	Rotation was not considered as an internal control related matter.	SOX did not have impact on the job rotation.
COMPLETE AND ACCURATE RECORD KEEPING	The basic accounting controls existed.	Many accounting controls (e.g., reconciliations) were enhanced. As part of the internal control documentation, the record keeping was more also comprehensive.
ADEQUATE DOCUMENTATION AND AUDIT TRAIL	Documentation was minimal in all key control areas, except accounting controls. IT systems didn't have systematical audit logs.	Control documentation requirements in key processes were heavily increased to secure proper audit trail. IT audit logs were implemented.
RELEVANT AND TIMELY MANAGEMENT REPORTING	Management reporting was on a good level thanks to a global SAP.	There were no major changes in the basic elements of management reporting. Monitoring of the status of internal control deficiencies were added to the management reporting.
RESTRICTED ACCESS TO INFORMATION SYSTEMS AND DATA BASES	Some basic access controls existed, but those were not documented and audit logs were missing, for example.	Access controls were formalized, and documentation was increased. Audit logs were implemented to key applications. Monitoring controls for access authorizations review were established.

The SOX implementation project for Nokia meant identifying and documenting the internal controls. In practice this meant rather extensive formalization of controls: The approval and authorization policies were renewed, more formal implementation of Nokia code of conduct was established, financial tools were redesigned with automated controls and many control procedures were designed to have more strict approval and documentation steps. Even though some controls had existed on a mental level within the organization, the change was significant in terms of formality and documentation.

"I think that during the process (of SOX-implementation) we noticed that we had a very incoherent way of complying with the controls and by no means did we have the controls in every single place where needed... thus it changed a lot. It was very positive change that we were able to get into the Nokia a really structured approach for all the approvals and the way things are controlled and

how the process works and that the rules are being followed. Thus, it really brought us assertiveness overall. It (SOX) forced us in a way to look after that things are done in right order and in the right way." (Senior Vice President, Group Controller)

"Before (SOX) I have a feeling it has been a bit Wild, Wild West, that there hasn't been that kind of a strict control and follow-up and monitoring." (Head of Group Internal Controls and Internal Audit II)

For example, before SOX the controls for indirect purchasing spend had been mostly relying on social control: Managers entrusted their teams to use the company money based on their own judgment. There might have been a manager who approved the costs, for example, as part of the budget approval process or verbally, but there were no company-wide controls to monitor the overall spend, nor were there controls in place to ensure proper supplier selection, identification of potential conflict of interests and contract negotiation. After SOX, employees were required to use tools to document the purchase requisition approvals, and they needed to involve the centralized indirect sourcing team to support them in the purchasing process.

"When we started in 2002, there wasn't any proper indirect sourcing process or tools or governance or, or any kind of mandate, that you didn't have to use indirect sourcing function if you wanted to buy something from outside. You could pretty much do it yourself. So we didn't control the spend. We had over five billion euros of spend, and much of it went through to the suppliers without any proper controls. There was no contracts in place, there was no proper negotiation in place, there was no professional purchasing organization in place. And we are talking about indirect spend as being everything from IT hardware, software, facilities, furniture, marketing, customer care, travel.. you know, all of these in the indirect category. So it's a huge spend, and back in those days our coverage of that spend was maybe 15 per cent or something like that. So there was a huge risk, because there was no contracts in place. There was also a huge amount of money wasted, because we hadn't professionally negotiated the deals" (Vice President, Head of indirect sourcing)

"We have now all these check-points, and before it was much easier to bypass them and avoid, you know, getting approvals for things and executing without permission and without POs (purchase order) and things like that…because before that it was very loose. If, if you think about marketing, for example, I had people that said 'Oh, I used to approve, you know, a million campaigns,' you

know, or 'I used to issue or tell agency to run one million campaigns without any approvals.' That's how it was before 2006." (Business Controller, Product Design)

As just described, the company had only very basic levels of internal controls in place prior to SOX, and the business was run relying a lot on social controls – carefully selecting the right people for the right jobs and empowering them to make decisions by using their own judgment. The SOX implementation meant changing the level of formalization from social-based controls towards more technical controls.

"This kind of formalized way of doing certain analyses or certain controls and then documenting the evidences, and storing everything and this type of practice or discipline. I think that came then with the SOX." (Manager Internal Controls, Manufacturing and Logistics)

"We didn't have that clear segregation of duties, meaning one person could do many things there, creating a purchase order, posting a good receipt, and then also somehow maybe touch what is happening in the invoicing area. Now these are separated to different roles and different people, so there is now less possibilities for fraud." (Manager, Purchasing Process Development and Strategy, Indirect sourcing)

"When SOX came, how we saw it first was that there were more detailed instructions what checks needs to be done. For example, when you request quotation from suppliers, it needs to fulfill certain minimum requirements, that there is a price, payment terms, delivery terms mentioned in the document, and only after that we should use those terms in the purchase order that we send to supplier. So, that kind of a requirement check point." (Manager, Purchasing Process Development and Strategy, Indirect sourcing)

Since the Sarbanes-Oxley Act was passed in July 2002, Nokia made significant efforts to reach SOX compliance in 2006 and has maintained compliance in a continuously changing environment. The timeline in Figure 8 summarizes the key actions that occurred in Nokia's SOX development work.
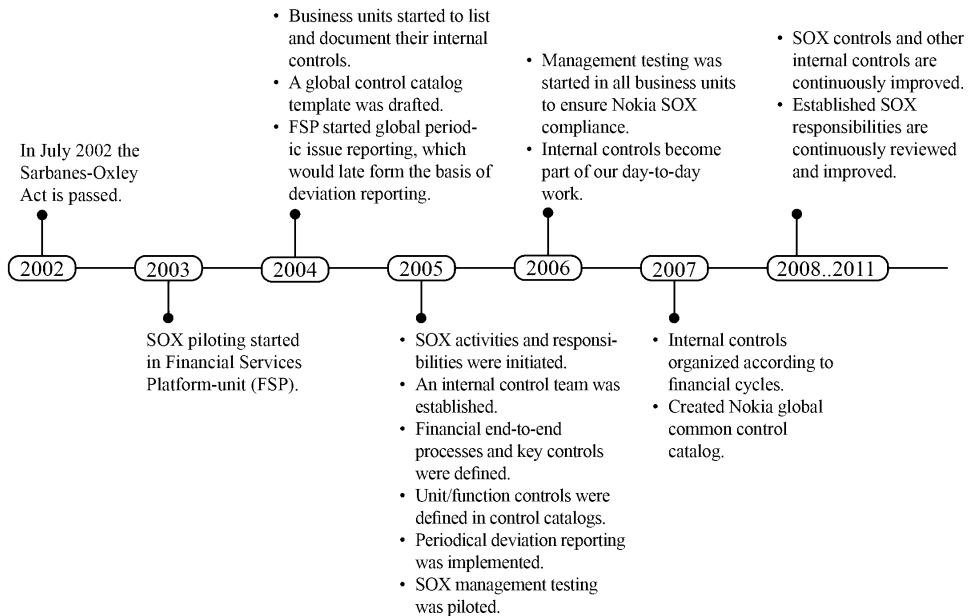
Figure 8. Key development activities within internal controls management at Nokia during 2002-2011.

3.1.3 Internal control framework used at Nokia

According to SOX, management is responsible for establishing and maintaining an adequate internal control structure and assessing its effectiveness annually. For this purpose, one must select a suitable framework. *COSO Internal Control Integrated Framework* (1994, 2013) has been the most widely adopted framework by companies subject to SOX. Thus, it was also selected by Nokia to identify, establish and document the applicable elements of its internal control system. The COSO internal control framework was introduced earlier in chapter 2.2.2.

Figure 9 illustrates how the different internal control components were identified by Nokia, based on the COSO framework. The figure is from Nokia's internal documentation, which was used in internal communications within the SOX program. The figure summarizes how Nokia identified, established and documented the most relevant structures, policies, procedures and other elements that formulated the five COSO internal control components: control environment, risk assessment, control activities, information and communication and monitoring activities.
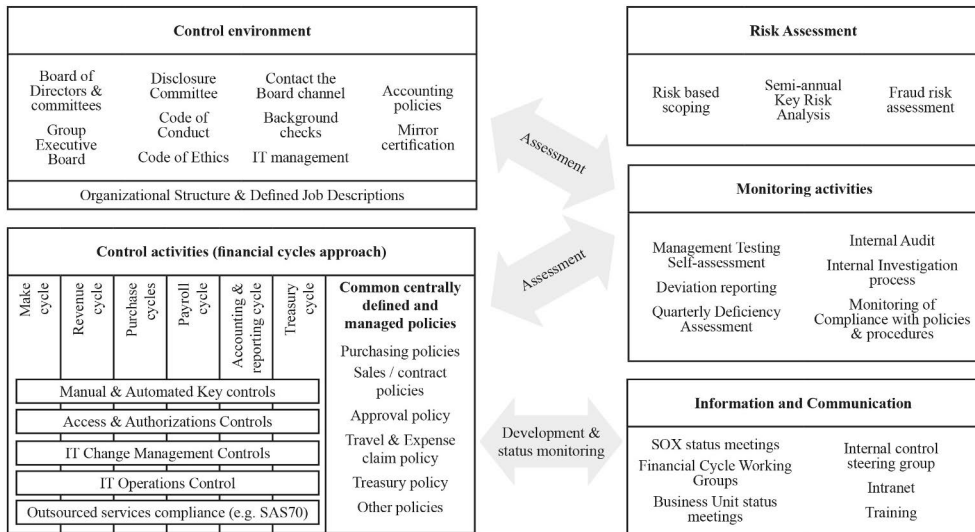
Figure 9. Nokia internal control framework

The **control environment** sets an organization's tone, influencing the control consciousness of its people. It is the foundation for all other components of internal control, providing discipline and structure. Nokia established its control environment by identifying and documenting key corporate level controls. Those included the existence of a board of directors, its committees and group executive board, code of conduct, code of ethics for top management, a whistle blowing channel for reporting potential non-compliance issues, background checks as part of recruiting process, company accounting policies and mirror certification process to certify the accuracy of periodic reports. The IT management, organizational structure and job descriptions were also identified as key control environment components.

Risk assessment is the identification and analysis of relevant risks to achievement of organization's objectives, forming a basis for determining how the risks should be managed. Nokia's most important activities involved in risk assessment were fraud risk assessment, semi-annual strategic and operational risk analysis and risk-based scoping aimed at prioritizing the units and accounts emphasized in the control assessment.

Control activities are the policies and procedures that help ensure management directives are carried out. Nokia identified these through identification of the most important financial end-to-end processes: manufacturing and logistics (make), revenue, purchasing, payroll, accounting and reporting and treasury. These end-to-end processes were also called *financial cycles*. Manual and automated key controls were identified in each of these cycles and documented into control catalogs. The IT controls - access and authorization, change management and IT operations controls

- were also identified and documented and encompassed into all financial processes. Outsourced services compliance was also considered an important part of control activities. Also, centrally defined and managed policies, such as purchasing policies and approval policies, were part of the control activities.

Pertinent **information** must be identified, captured and **communicated** in a form and timeframe that enable people to carry out their responsibilities. Nokia defined as its primary channels for information and communication 1) the internal control community status meetings (SOX status meetings), where all stakeholders regularly met to discuss the internal control topics; 2) the financial cycle working groups where the relevant stakeholders from each financial cycle gathered; 3) the business unit management meetings where internal controls were a standard agenda topic; and 4) the internal control steering group that had the overall oversight responsibility for the internal controls and SOX compliance. Intranet and internal training of employees were also important channels to share knowledge and information about IC requirements.

Monitoring activities are needed to assess the quality of the internal control system's performance over time. This is accomplished through ongoing monitoring activities, separate evaluations or a combination of the two. The primary means at Nokia for separate evaluations were management testing, self-assessment, internal audit and the internal investigation process, which all aimed to evaluate the effectiveness of internal controls and promote corrective actions to improve the process. Ongoing monitoring included the normal business practices wherein internal control deficiencies were noted and investigated further, such as monthly controller comments and deviation reporting, the quarterly deficiency assessment and the prevention and detection of compliance issues through monitoring compliance with internal policies and procedures.

This internal control framework provides a wide and holistic view of Nokia's system of internal control. This is not all-inclusive but provides a good overview of the key ingredients.

3.1.4   Internal control governance model adopted at Nokia

"I think setting up the [SOX] organization was crucial…This way it was ensured that in all levels, all parts of the organization there's a person who is like SOX dedicated person. The internal controls organization ensured that it's implemented in all parts of the world and the organization." (External auditor)

Following the strong support from the top financial management, a carefully planned governance model for internal controls was established. Figure 10 illustrates this.
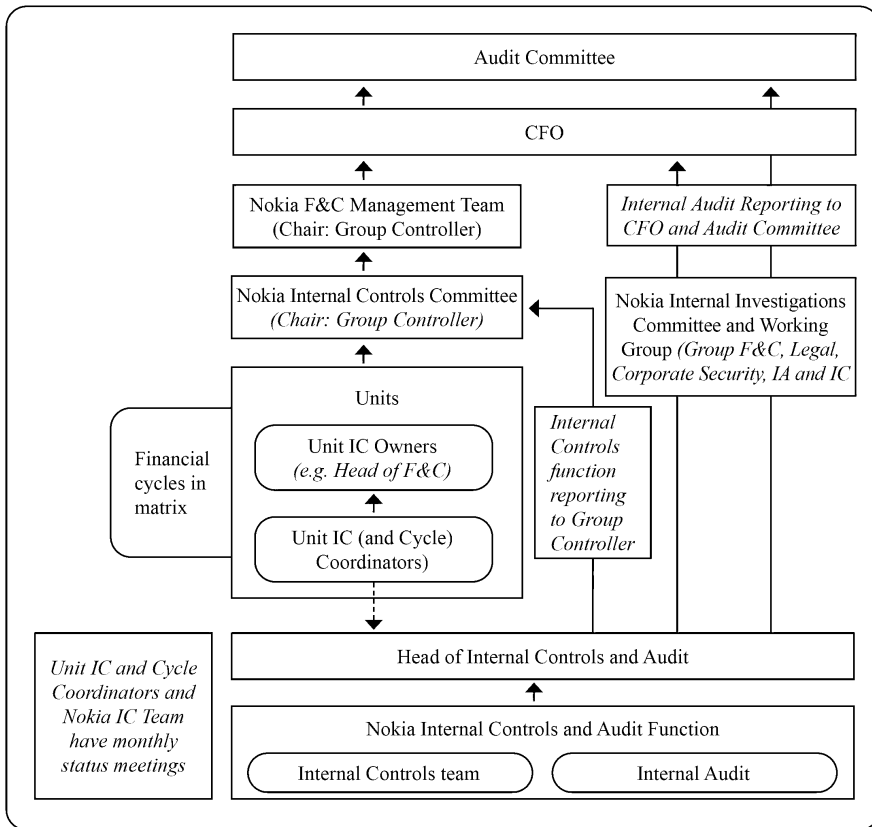
Figure 10. Internal control governance model adopted at Nokia

The overall coordination work related to SOX compliance was handled by the Nokia Internal Controls team[24], which was responsible for defining, establishing and developing the instructions, templates and processes related to internal control compliance.

Each horizontal or business unit had nominated an internal control coordinator (also called SOX coordinator in the SOX implementation phase) who was responsible for coordinating the implementation and testing of the revised internal controls in specific subunits. For every financial cycle (introduced in 3.1.3 section), a coordinator was also nominated to coordinate the IC-related activities in that particular cycle. Each unit and cycle had also nominated owners, who were typically heads of the finance and controls for that area. The unit and cycle IC coordinators reported in a matrix to the group internal controls and audit function. They were the

[24] Nokia Internal Controls Team merged in 2019 with Internal Audit team, as reflected in Figure 10.

key people for ensuring that the subunits received the information needed to comply with the SOX controls.

The purpose of the Internal Controls Committee (also called SOX Steering Group in the implementation phase) was to ensure that effective internal controls are maintained and important issues are escalated further within the organization. Financial cycle owners, selected Unit IC owners, Internal Audit and the external auditor were the members of the committee. The key tasks of the committee were to 1) approve key changes to the internal controls design, 2) validate the internal controls assessment approach and annual plan, 3) escalate actions to common or unit-specific prioritized issues and 4) approve and evaluate the Internal Controls common Short Term Incentive Plan target. Significant issues handled in committee were escalated further to the Nokia Finance & Control Management Team and CFO. The Group Internal Controls and Audit function was also reporting the summary of the internal control compliance to the Nokia Audit Committee.

Internal Audit at Nokia is an independent and objective function reporting directly to the CFO and Audit Committee. Nokia established the Internal Audit function in 2006, which is interesting, because having no internal audit function in such a sizable organization was very uncommon. There had been an internal audit function in the 1990s that was subsequently terminated. During a restructuring project in 2009, the Internal Audit function was merged with the Internal Controls function. Previously it had been a separate function under the CFO. After combining the management of these two functions, these remained as two separate teams, because it was important to retain the audit function's independence and objectivity. Nokia also had an Internal Investigations Committee and Working Group that managed the fraud investigations. This group consisted of representatives from Group Finance and Control, Corporate Security, Internal Audit and Internal Controls.

3.2 Design and implementation of internal control system at Nokia

3.2.1 Nokia's internal control framework - technical control perspective

Chapter 3.1.3 presented Nokia's internal control framework, describing at a high level the elements that Nokia had identified as part of its internal control system. The interplay between technical and social control are at the core of this study, so next this framework will be analyzed to identify how the technical and social controls were designed and implemented.

This study defines technical control as controls that are based on procedures, policies, rules and standards that specify how tasks are to be performed and how individuals and groups are organized (Malmi & Brown 2008, Tessier & Otley 2012a, Simons 1995). Technical controls are embedded in the technology of work and govern day-to-day activities. These are the more visible, objective components of the control system, and thus, are the easiest to research.

To study the design and implementation of the technical control, some examples were selected from each of the internal control framework elements (Figure 9) to demonstrate technical controls. The following criteria were used to select the controls:

- The controls were impacted by the SOX Program, meaning that they were either new controls or revised versions from the controls in place before SOX.

- The controls impacted the everyday work of wide range of employees working worldwide.

Thus, some controls that are present in Figure 9, such as Board of Directors or Internal investigation procedure, were left outside the scope of the analysis. Next, the selected controls are introduced.

Control environment

Simons (1995, 42) listed codes of conduct as being the most basic forms of boundary controls, which sets boundaries for the acceptable domain of activities for organizational members. A boundary system is used to set limits in the search for new opportunities, whereas belief systems address what level of performance is desired and how the organization wants to create relationships internally and externally. In that sense, a code of conduct can also demonstrate a belief system, which, according to Simons (1995, 34), communicates the company's core values and is "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization." From these perspectives, a **code of conduct** can be communicated to the organization, not only through unwritten beliefs or values but also through formal policies.

Thus, the formal document of a code of conduct demonstrates a technical control. Nokia established a new Code of Conduct to promote compliance with the highest standards of ethical conduct and applicable laws among all Nokia employees, officers and directors. From the technical point of view, Nokia's Code of Conduct was introduced as a written policy, available on the corporate website and intranet in all relevant languages. Web-based Code of Conduct training was additionally

made available annually to all employees, and the percentage of attendance at Code of Conduct trainings was followed.

Mirror certification was an internal document signed monthly by each subunit, typically by the unit manager and controller, to certify that: 1) their unit's financial reporting purposes had been provided according to Nokia's accounting rules and 2) internal controls were in place and operating effectively, and all significant or material deviations, if any, had been reported to relevant units/line managers. Nokia's consolidated level mirror certifications support the external certifications given by the CEO and CFO in each annual report on Form 20-F, which is required by the Sarbanes-Oxley legislation.

Risk assessment

Risk-based scoping and key risk analysis. One key element of the SOX program was to identify the key controls, which would then be in the so called "SOX scope." SOX scope meant the controls that were periodically assessed either via management testing or self-assessment. Each unit's management was responsible for preparing a Key Risk Analysis as part of short-term planning and related action plans, which were consolidated into Nokia-level key risks. This ensured escalation through reporting channels and visibility to the top management. Risks were identified, prioritized and assessed as a necessary precondition in the design of the financial cycle's key controls. The Risk Assessment ensured consideration of external and internal circumstances that may occur and adversely affect records, processes and financial data, including fraud. Based on the risk analysis, a risk-based scoping was conducted to select which controls and organizational units were selected into the SOX scope.

Control activities

Control activities are typically action controls, such as behavioral constraints (passwords, authorizations, approval limits, segregation of duties) and pre-action reviews (expenditure approvals), which aim to make more it likely that employees will act in the organization's best interest (Merchant & Van der Stede 2016, 80-82). Before SOX, Nokia had both behavioral constraints and pre-action reviews in place to some extent. However, these were formalized in many ways during the course of the SOX program's implementation.

The control activities were documented in written **policies**, flowcharts and **key control** catalogs. Merchant and Van der Stede (2016, 82) call these written rules, policies and procedures "action accountability," which are also forms of action controls. As part of the SOX project, Nokia identified the financial end-to-end

processes (internally called financial cycles) and documented them in flow charts. Table 7 summarizes the selected processes:

Table 7.   Nokia End-to-end processes and key controls (Financial cycles)

CYCLE NAME	SHORT NAME
From Customer Order to Revenue / CoS to Cash Collection Cycle	Revenue (RE)
From Raw Materials to Product Cost to Finished Goods	Make (MA)
From Sourcing to Payment	Purchase (PU & iPU)
Treasury	Treasury (TR)
From Hire to Final Payout	HR
From Accounting Transactions to Consolidated Financial Statements and Statutory Reporting	Accounting and reporting (ACR)
IT Cycle	IT

Key controls were identified for each of these financial cycles and documented into control catalogs. These key controls included automated and manual controls, and preventive and detective controls. The documentation included e.g. the control activity definition, control objective, related risk and description how to assess the control effectiveness.

Each organizational unit had to evaluate which of the key controls were applicable in their context and ensure that those controls were in place and working as defined in the control catalogs. The ultimate target was to utilize the company-wide approach, so that subunits would use the general control definitions rather than define their own controls. Controls described in the catalogs were to be performed as follows:

1. Execute control according to instructions in the control catalog. Create evidence documents.

2. Every performed key control needs evidence to prove that the control was performed. If evidence is missing, it is assumed that the control was not performed.

3. Store the evidence as described in the control catalog. SOX evidence is required to be stored for 7 years.

The control activities included, for example, procedures for selecting suppliers, approving expenditures, processing payments (purchasing cycle), maintaining customer master data, taking in customer orders, setting up and monitoring credit

limits and discounts, and issuing customer invoices (revenue cycle). They also included system access and authorization controls (IT controls). Figure 11 provides an example of an internal control at Nokia. Purchase Request Approval is one control from the purchasing cycle.

Control Objective	➡	Purchase requests are approved according to approval policy.
Risk	➡	Unauthorized/unethical use of company money.
Control Activities	➡	Approval policy with approval limits exists. Approval limits are kept up-to-date in SAP HR database and Purchase tool database (and also in Excel tables for related project manager approvals) and monitored quarterly. Purchase requests are approved according to the policy.
Evidence	➡	Valid approval policies/authorities are up-to-date. Approval limits are up-to-date in SAP HR database and in Purchase tool database. Check that approval limit monitoring has taken place. Purchase request approval exists (Automatic approval flow on the basis of limits and solid line manager hierarchy exists).

Figure 11. Example of an internal control: Purchase request approval

Information and communication

Nokia used formal training mechanisms (classroom and web-based training) to communicate SOX requirements. When the SOX project was launched, extensive road shows and training programs occurred, during which the core SOX experts travelled globally to provide face-to-face sessions for multiple organizational units. After the major road show efforts, Nokia continued to provide formal internal control training sessions to its employees. Information and communication were visible through the following mechanisms:

- The intranet was the main information channel where financial cycle process descriptions and other instructions were available for all Nokia employees.

- Face-to-face and remote training on internal controls and SOX, including a SOX e-learning package, was available for all Nokia employees.

- Financial cycle working groups existed to create and maintain financial cycle descriptions and control catalogs and to create instructions and provide support to units.

- Internal Controls status meetings (SOX status meetings) were used to follow the status of control assessment plan and defect resolution progress.

Monitoring activities

The SOX program introduced multiple new mechanisms for monitoring the functioning internal control. Deviation reporting, management testing and self-assessment were the organization's most visible mechanisms.

Deviation reporting is a process in which internal control deviations in the subunits during a particular period are identified, documented and reported to relevant management by using a specific template and time schedule established by Nokia. The purpose of the deviation reporting process is to inform management of the status of the subunits' internal controls. A responsible manager also needs the deviation reports to sign off the Mirror certification. Nokia is able to make conclusions about the overall effectiveness of the internal control system by periodically consolidating the deviation reports prepared by the subunits.

Management testing and **self-assessment** were the primary means for performing control assessment, which serves as a basis for Management's Annual Report on Internal Control over Financial Reporting, mandated by the Sarbanes-Oxley legislation. The assessment was performed to verify the operating effectiveness of Nokia's key controls in selected countries and units based on the formal SOX scoping.

Management testing was the only control assessment method used in the SOX implementation phase. In practice the management testing meant that a group of independent peer employees were sent to assess the effectiveness of the key controls in the SOX scope units. For example, a team consisting of two controllers from across the company and two internal control team members would spend a week in a sales or manufacturing unit to assess the controls in one of the scope countries. The assessment was conducted by carefully following a predefined test script that provided the testing team clear instructions on how to assess the control. The testing results were carefully documented in a system that was tailor made to fit the SOX testing planning and documentation purposes.

After a couple of SOX compliance years, an additional self-assessment concept was introduced, whereby a unit assessed its controls itself: Instead of the management testing team travelling to a site, the local site would nominate a testing team (typically from the F&C employees) who performed the testing themselves and documented the results in the same manner as in the management testing method.

The results of the control assessment were subject to quality and external audit review. Nokia had defined the methods and instructions for performing the

assessments, and the subunits were responsible for planning, executing and reporting the assessments for the identified key controls within their units. Figure 12 illustrates the control assessment process and the link to 20-F filing[25], as SOX requires. The process consists of the following steps:

Upper row:

1. *Scoping of Testing:* According to SOX, a certain percentage value of transactions and certain functions must be covered by testing each year. In scoping, it is decided which countries, areas, and areas of business are to be tested. The countries and areas may vary year to year, depending on business volumes.

2. *Test Designing & Test Planning:* Once the scoping is done, the testing sessions will be planned and designed by a testing manager assigned for each testing session. The testing manager is responsible for taking care of the testing practicalities, which covers assigning the testing team, planning the schedule and selecting the samples (e.g., which transactions will be reviewed).

3. *Executing Tests:* Testing is a crucial element of the internal control process and is done frequently according to the performing unit annual test plan. Tests are performed according to test scripts in control catalogs. Testing can be either management testing or self-assessment:

   - *Management testing* requires that independent testers assess controls performed by the unit to verify that controls are performed properly.

   - *Self-assessment* means that the control performing unit can assess its own controls to verify that controls are performed properly. However, self-assessment also must be performed by an independent person so that those responsible for the control activity are not testing their own work.

4. *Final Report & Documentation:* The Final testing report is presented to local management. The results of the testing are documented in a selected tool used at Nokia.

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[25] Form 20-F is an SEC filing submitted to the US Securities and Exchange Commission and is used by certain foreign private issuers to provide information (SEC 2012).

Middle row:

5. *Solving Deficiencies & Retesting:* If the evidence described in the control catalogs was not found during testing, then the control needed to be fixed. After a while, typically 3-6 months since the defect was found, the testing was re-performed to evaluate whether the control performance has improved.

Lower row:

6. *Quarterly GLAD Analysis:* A detailed analysis of open defects was performed on a quarterly basis. This was called a Global Summary of Aggregated Defects (GLAD).

7. *GLAD Summary (IC Committee):* The summary of the open "GLAD items" was reviewed and discussed in the monthly Internal Controls Committee meeting.

8. *Significant Deficiency (Audit Committee):* All defects categorized as 'significant' were reviewed in Audit Committee meetings. Before that, the items were assessed by the Group Finance & Control.

9. *Material weakness (20-F):* In case there would be any defects categorized as material weakness, those must be reported in the management report on Internal Control over financial reporting by the CEO and CFO in a 20-F filing.
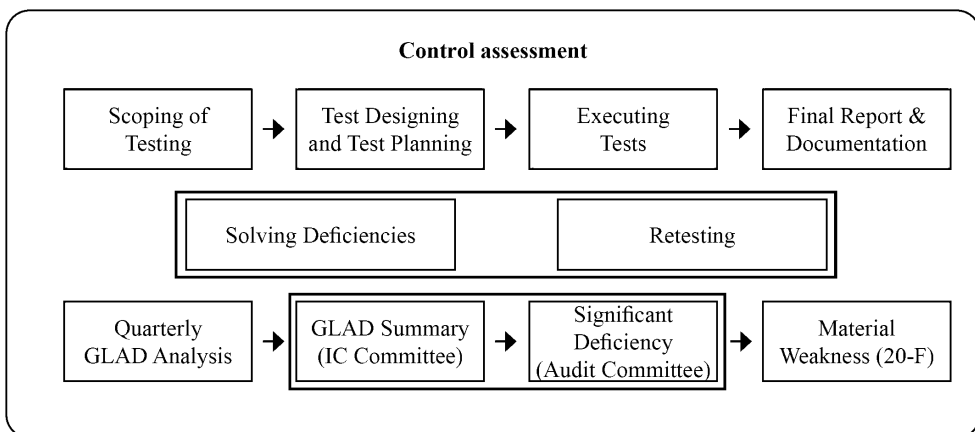
Figure 12. Control assessment at Nokia

So, what did SOX mean for employees' everyday work? The new control requirements meant significant changes in the daily tasks for many employees. SOX impacted a substantial number of the work force, not just the Finance & Control employees. To mention some of the practical examples of the SOX impacts:

- Employees globally needed to start formally performing key controls for the financial cycles. For example, many subunit managers were allowed to approve costs orally before SOX, but now they needed to do everything in writing and archive the documentation according to the new control descriptions.

- Employees also needed to participate in control assessments. Many Finance & Control personnel needed to travel to be part of the management testing teams. The local subunits needed to make themselves available for the management testing and to support the testing by providing needed evidence and documentation to justify the control effectiveness.

- After the management testing, the subunits needed to perform corrective action in case any internal control deviations were found. They also needed to prepare for retesting.

- Operational and finance directors were obligated to provide the mirror certifications and deviation reporting forms as Nokia requested. They needed to start paying an increasing amount of time to follow up on the internal control performance to be able to make such statements.

Changing the way of working on a global scale towards more systematic and documented processes is a significant effort in a multinational company. It always involves the risks of facing employee resistance and negative attitudes. Applying social controls to introduce and implement the technical controls may provide manager a useful solution to overcome these challenges.

3.2.2 Nokia's internal control framework - social control perspective

The previous chapter described the internal control framework introduced via SOX from the technical control point of view. COSO (2013) emphasizes that, even though we have many internal controls embedded in the technology and systems, an effective internal control is largely still dependent on a human factor, i.e., on how individuals perform the controls and are held accountable for any control failures.

Employees must be motivated to perform their internal control-related responsibilities and do more than just a "tick the box" exercise if they are going to

adopt the technical controls. Social controls seek to appeal to the emotional, non-rational, affective elements within employees (Ray 1986, 288), so they definitely have a role in this adoption process. Whereas technical controls are something that we can typically document and audit by looking at the audit trail, social control occurs usually in unwritten form. This chapter seeks the patterns of social control that the researcher was able to identify from the field.

Managers use different ways to encourage and facilitate self-control and social pressure, for example, by applying selection and placement, training, cultural control, group-based rewards, and providing necessary resources (Merchant 1985, 40). An organizational culture is the foundation for social control, and it is very much also linked to the control environment, as the COSO framework describes. Social control is not always consciously designed, because it often derives from or is an artifact of the organizational culture.

Prior study suggests that the level of interaction between the social and technical controls is important and requires more attention. For example, according to Alvesson and Kärreman (2004), social and technical controls are tied rather than being substitutes, as Ouchi (1979, 1980) suggested. Abernethy and Chua (1996) suggest that technical controls can help rationalize the social components of the control package. This study seeks to understand how this relationship can work the other way around. In other words, next we will take a closer look at how Nokia used social control to introduce the technical controls. The next chapters list the technical controls in each of the five internal control components, as the previous chapter described, and discuss the social controls that were identified from the field that played a role in the introduction and implementation of the technical controls. These social controls consist of personnel and cultural controls, as defined by Merchant and Van der Stede (2016).

Control environment

Technical controls: code of conduct, mirror certification

Social controls: tone at the top, selection and placement of employees, job design, necessary resources, group rewards

A code of conduct as a written document represents a technical control that can be viewed as a rationalization of the social components of a control system (Abernethy & Chua 1996). Thus, a code of conduct serves as a good example of a control that actually take the form of both a technical and a social control. In addition to being a written policy, Nokia introduced its Code of Conduct as a demonstration of the company's values and culture. Cultural control exists to shape organizational

behavioral norms and to encourage employees to monitor and influence *each other*'s behaviors. Nokia had a very strong organization culture, which is the foundation for social control, including the organization's values, beliefs, norms (Alvesson & Kärreman 2004; Simons 1995) and symbols (Malmi & Brown 2008; Schein 1992). This form of control is based on the assumption that individuals do what is best for the organization either because they are self-directed or because they are influenced by social pressure.

According to Simons (1995), belief systems are communicated formally through documents such as mission statements and statements of purpose. Belief systems are used to inspire and guide the search for new opportunities. At Nokia the organization culture was based on the "Nokia Way," which emphasized the speed and flexibility of decision making and promoted an informal work culture. The Nokia Way was based on the company values, which had remained unchanged during the years 1992-2007[26]. Many of the interviewees mentioned that the old values had been key cornerstones in building the success of the company during the 1990s.

Nokia is an old company that grew very fast, and mostly organically during the 1990s from a small Finnish firm into a global giant. Many interviewees described the old company culture as being based on trust and empowerment, which are features of social control. One of the core old values of Nokia was respect for the individual, which promoted teamwork - a feeling of family.

> "Nokia is a company that…has a very high level of trust and reliance on corporate P&L [Profit and Loss]. And I think that has served before the company very well…This culture of trust enabled the organization to grow very quickly and enabled people to go out into different markets and make decisions that were good for the business without having to run back to Finland and get permission for every decision they wanted to make. So people have been empowered, and I think that served the company well." (Head of Internal Audit)

Cultural controls represent the manageable aspect of organizational culture (Malmi & Brown 2008; Merchant & Van der Stede 2007) and include all the "efforts to persuade people to adapt to certain values, norms and ideas about what is good, important, praiseworthy, etc. in terms of work and organizational life" (Alvesson & Kärreman 2004, 426). Cultural controls often have the advantage of being relatively unobtrusive. Employees may not even think of the shared norms or "the way we do things around here" as being part of the "control" system (Merchant & Van der Stede 2016, 95). As such, organizational cultures can substitute for other formal types of

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[26] The corporate values were renewed by the new CEO in 2007, briefly after the SOX was introduced.

controls, or, as Peters and Waterman (1982, 75) suggest, "the stronger the culture…the less need there is for policy manuals, organizational charts, or detailed procedures and rules."

> "SOX is only a tool. The role of top management is so important. Because you need to have a proper tone at the top. The most important thing here [in the SOX project] is that it should not be that much about changing people or controlling people, but more about having a culture, where people understand that there is a zero tolerance for breaking the rules. And you need to have a culture where everyone understands that in the long run it's best for the business." (Executive Vice President, Chief Financial Officer)

Practical frameworks and professional audit standards both indicate the importance of management attitudes in fostering a healthy and sound approach to risk taking and general business practice by using terms such as tone at the top and the control environment. Prior literature suggests that top management support is necessary for achieving a "real" control value in the organization (see, e.g., Arwinge 2014; Holmes, Langford, Welch and Welch 2002). Top managers must not consider internal control to be a necessarily evil that exists to please stakeholders. Rather, it must be both necessary and valuable, and that is displayed in both talk and action (Merchant & Van der Stede 2016, 94).

> "Top management sets the boundaries through its own actions to state that simply nothing that goes against the rules is tolerated. You need to have a zero-tolerance." (Executive Vice President, Chief Financial Officer)

Prior study has emphasized the importance of top management's behavior for engineering appropriate employee behavior (see Holmes, Langford, Welch and Welch 2002) and financial reporting decisions (see D'Aquila 1998). Several studies show that tone at the top is a crucial determinant of ethical practices within business organizations (e.g. Bannon, Ford and Meltzer 2010; Berson, Shaul and Dvir 2008; Merchant 1990; Rotemberg & Saloner 2000; Schaubroeck et al. 2012; Weber 2010). Schaubroeck et al. (2012) present various ways in which ethical leadership is translated into subordinates' unethical behaviors, including the trickle-down mechanism through which traits of ethical leadership at the top influence ethical conduct in the lower levels of organizations.

The top financial management at Nokia, such as the current and previous Corporate Controller, played a key role in the internal control adoption process. It was widely interpreted in the organization that the SOX compliance project was a key priority of the top financial management. Chapter 3.1.1 demonstrated this.

It was very clear from the beginning that the senior management was closely monitoring the progress of the SOX implementation. As a result, middle management in the subunits considered the issue as a top priority. The importance was communicated very effectively within the organization; thus, most of the people at all levels of the organization took internal control requirements very seriously and wanted to co-operate. The success of the implementation project was easy to measure in terms of the internal control deficiencies, so it was very concrete to many employees to understand what was expected from them. There is no question of whether or not there was a strong tone at the top at Nokia, which supported the SOX program.

> "I have to say that the management involvement and also the management attitude that we have is also helping a lot." (SOX Coordinator)

According to Simons (1995, 122), middle managers are key nodes of the information network that reveals senior management's concerns and moves newly collected information up, down, and sideways in the organization. At Nokia the finance leaders for different business functions and units and local entities are examples of middle management. They took the SOX project very seriously – and were expected to do so by the top management. In a global corporation with multiple organizational layers, it is necessary to gain support from the middle managers to ensure proper implementation. Middle managers may play a significantly greater role in local organizations than the top executives, who never physically visit the premises. Thus, they are key players in walking the talk and setting expectations and accountability within organizational units and teams. The message should be consistent throughout all layers of the organization. At Nokia, the role of middle management in SOX compliance was strong: they were always present in the SOX testing sessions, they were personally accountable for training their organizations for the new internal control requirements and they were always in the loop of the communications between their teams and the Internal Controls team. The message was clear for the organization: SOX is a priority.

Employee selection – finding the right people to do a particular job – is one of the most important personnel controls (Merchant & Van der Stede 2016, 88). At Nokia, strong personnel controls substituted for other controls. As the Head of the Internal Audit described:

> "I think Nokia focuses very hard on, on recruitment, and…not letting people into the organization until they are sure that they know who they are. And that they fit with the culture and the values…But then once they are inside the company they have a pretty high level of freedom. And so it's important that they know

and that they live the values and the culture. And so people were generally doing the good, right, smart things for the business, and controlling the business properly, but it wasn't always documented." (Head of Internal Audit)

Strong employee controls supported forming a strong control environment. The SOX program was a priority to the top financial management, so they wanted to ensure that there were adequate and capable employees in the right roles to ensure the project's success.

Finding the right people to do a particular job and giving them both a good work environment and the necessary resources can increase the probability that a job will be done properly (Merchant & Van der Stede 2016). When the role of SOX coordinator was introduced, the selected employees felt proud for being taken into this important role. Not only was it exciting to be a crucial part of a top priority initiative, but it was also motivating to be able to work closely with the business. Many interviewees emphasized how important it was that the SOX coordinator was organizationally part of the business unit (and not central Finance & Control organization, i.e. Internal Controls team). However, this changed during the field work, because there was a reorganization at Nokia in 2009. As a result, the roles for unit-specific SOX coordinators ceased, and a central Internal Control team was expanded. In the future this centralized team would work as a pool for the business units to provide internal control and SOX expertise. Even though this new arrangement increased efficiency in many tasks (such as resource planning, testing, scoping) and enabled cost savings, many old SOX coordinators were disappointed, as they no longer felt as close to the business unit. Many business unit representatives also felt that the disadvantages of this arrangement exceeded the expected benefits.

To summarize, Nokia demonstrated its commitment to competence by selecting competent people as SOX coordinators, by designing their jobs to fit the business and control needs, and by providing enough time and budget to be able to succeed in the SOX coordinator role. These are all important elements of social control.

Expected behavior and social norms can also be enforced through peer pressure and informal (or social) sanctions (Fortado 1994; Nemeth & Staw 1989). Mutual monitoring, such as group rewards, is a powerful form of group pressure on individuals who deviate from group norms and values (Merchant & Van der Stede 2016, 90, 92). Evidence suggests that group-based incentive plans create a culture of "ownership" and "engagement" to the mutual benefit of organizations and their employees (Rosen, Case and Staubus 2005). According to Merchant and Van der Stede (2016, 92), the link between individual efforts and the results being rewarded is weak, or at least weakened, with group rewards. Thus, motivation to achieve the reward is not among the primary forces affected by group rewards; instead, communication of expectations and mutual monitoring are. Group rewards can

encourage team work, on-the-job training of new employees (when assigned to teams that include experienced colleagues) and the creating of peer pressure on individual employees to exert themselves for the good of the group (Merchant & Van der Stede 2016, 92). Nokia utilized group rewards in the SOX implementation – SOX compliance was part of the personal bonus plan for several functions and business units globally:

> "It was in a person's incentives very clearly stated that they must succeed at SOX, so.. I see that as the most important factor to achieve compliance." (Internal Controls Manager, SOX Program team)

> "We really had targets related to SOX compliance, so I think that was a good way to take it forward." (SOX Coordinator, INS)

> "SOX was in everybody's IIPs[27] and I thought that was critical, because it really indicated to people that this was an important thing, that they were responsible, and they had to participate and contribute on a positive fashion, and that if the team failed, you know, if one individual failed in the team, the team could fail. That led to a lot of cooperation and collaboration." (Partner, External Auditor)

The management control literature suggests that organizations do reward performance and punish nonperformance and noncompliance but do not reward compliance (Merchant & Van der Stede 2016; Simons 1995). However, Tessier and Otley (2012a) noted in their study the fact that managers can decide to reward and/or punish performance and/or compliance. This is line with what was seen in the field: Nokia included SOX compliance objectives in the employees' performance appraisals and rewarded employees on the attainment of both compliance and performance objectives. Employees were rewarded not only through formal appraisal mechanisms but also through informal channels, for example, by demonstrating appreciation through informal communications.

Providing rewards or incentives based on collective achievement encourages cultural controls (Merchant & Van der Stede 2016, 92). Whereas individual rewards are typical examples of results controls, the link between individual efforts and the results being rewarded is weaker in group rewards. Thus, organizations must think of ways to motivate employees to achieve the group incentives. Social sanction and group rewards worked very well for this purpose at Nokia.

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[27]   IIP = Invest In People was the Incentive Plan used in Nokia, which served as a basis for the personal bonus payments.

Risk assessment

Technical controls: risk-based scoping and key risk analysis

Social controls: selection of employees, job design, providing necessary resources, training and communications

Risk assessment was one of the founding factors behind SOX compliance. Via the risk analysis and risk-based scoping, it was decided which controls in every organizational unit had to be assessed as part of the management assessment. Nokia wanted to involve the business units instead of letting an external auditor, for example, perform this exercise. This was seen as an important part of gaining the business units' commitment to SOX project. The role of the SOX coordinators was to understand the risks in their respective units, and they were given the time and budget to be able to spend a lot of time with the business units to do the risk analysis and scoping exercise.

> "The scoping part, that was done kind of like middle-up and middle-down, so it wasn't like bottom-up or top-down... You need to involve the people who knows and understands the numbers and the risks." (External Auditor)

> "The scoping is a meaningless exercise if the controls in the first place don't add up, and if you don't understand the real risks…I think it all starts from the solid processes: what are the business processes and understanding those. What is it that we are doing in different parts of the organization and then identifying what is critical in the process, identifying the places in the process that have to be controlled, that they somehow feed something into our financials… So, this kind of overall process understanding and linking that to the financial statements and then basically recognizing and building the internal control or the SOX controls then to ensure that certain things are then done." (SOX Coordinator)

From a social control viewpoint, Nokia used many internal resources for this exercise. SOX scoping was also a typical theme in internal trainings and meeting agendas. This way it was assured that everyone - at least in the Finance & Control community - knew what this exercise meant in practice.

Control activities

Technical controls: policies and key controls

Social controls: tone at the top, selection and placement of employees, job design and necessary resources

Merchant and Van der Stede (2016, 90) list job design and necessary resources as a form of personnel control. A way to help employees act appropriately is to ensure the job is designed to allow motivated and qualified employees a high probability of success. Employees also need a particular set of resources to do a good job, including information, equipment, supplies, staff support, decision aids and freedom from interruption. (Merchant & Van der Stede 2016.)

Nokia invested a lot in the SOX implementation. There was a centralized "SOX team" (later called the Internal Controls team) who provided the necessary support to the subunits, including information, tools, instructions, staff support, coordination and validation work and decision aids. From the beginning, it was a clear vision of top financial management that Nokia wanted to build capabilities in-house and ensure that the company had enough qualified people and resources to ensure that the SOX implementation was done successfully.

At the beginning of the SOX program, each function and business unit had nominated a *SOX coordinator* who was responsible for coordinating the risk-based scoping exercise and the implementation of the applicable key controls within specific subunits. They were the key people for ensuring that the subunits received the information needed to implement the new controls. SOX coordinators were ambassadors of the control practices within the units, because they could understand both the specific needs and circumstances of the unit under question and also the control activities relevant to the unit.

SOX coordinators played a very important role in the SOX implementation, because they really took the lead in ensuring that the SOX requirements were translated into action in the reality. The SOX coordinators were selected from the business unit, so they knew their subunit's daily operations very well, and more importantly, they were already trusted by the most important internal stakeholders. When the new control requirements were presented by the SOX coordinators, there was very little change resistance.

Perhaps one reason for not experiencing change resistance was the overall way the internal control compliance was governed at Nokia. Even though the company had a very strong central coordination and supervision in the SOX project, the subunits were still allowed to contribute to the control development work. The SOX coordinators were the key enablers who represented the subunits, but they were also strongly involved in the central SOX team's activities. They kept the discussion ongoing between with the HQ and the subunit.

So, the social control was enacted by carefully selecting the individuals for the SOX coordinator role and by designing their role in a way that they were really able to help the subunits in control implementation. In addition to the SOX organization, the job roles of the controllers made a difference. It was clear that SOX compliance

was part of a controller's job description. One controller experienced his role as a local controller in Turkey like this:

> "As a LSU [Local Sales Unit] sales controller, of course I am responsible for SOX controls, for coordinating the SOX testings, and making sure that all the controls are done frequently, and so on. For me, the minimum requirement for the SOX compliance is really that we fulfill those minimum requirements from Nokia, that, that we, we are doing the controls every month, we are kind of passing the management tests. (Local Sales Controller)

Many interviewees experienced that SOX coordinators were the links who translated the SOX requirements into normal business practices within the subunits. The role of the SOX coordinators could be related to the concept of hybrid expertise (Miller, Kurunmäki and O´Leary 2008), which refers to an expertise produced out of two or more elements normally found separately. Individuals with hybrid expertise make possible lateral information flows and cooperation across organizational boundaries. In this case, they were essential facilitators in translating the internal control requirements into the form that the business unit representatives understood.

So it is clear that the selection and placement of SOX coordinators was a central social control in the case of Nokia. But, equally important, social control was the job design of most of the employees whose jobs were impacted by the controls. For example, a buyer from the Sourcing department described her team as follows:

> "I believe that the role of INS [Indirect Sourcing] at Nokia is not only, you know, to reduce the prices and to create better contracts, but also to ensure that the orders are SOX compliant. I always tell this to the buyers when I train them, that this is your responsibility, this is one of your main responsibilities in creating an order. And people do take it seriously, because it becomes part of their job. So, each and every day, when you create orders, and the number of orders you create depending on your category can be from about five, six orders to fifty or sixty orders per day, it's part of each and every order for you to ensure that you comply with the SOX requirements that we have to comply with." (Transactional buyer)

Providing necessary resources also enabled the creation of one set of global key control activities: One crucial resource, which enabled the companywide SOX implementation, was the enterprise resource planning system (SAP). Nokia had only one global system in place, which had been made possible by its organic growth, instead of growing, for example, through acquisitions. Most of the financial transactions went through the same system, so it was much easier also to implement the new controls.

> We transferred into one and only SAP very early and we have had one system, where all information comes from. So in a way we have not had the kind of problems where you have a subunit in Brazil or somewhere else, and when they are dealing with their own systems and then only send out some consolidated report to headquarter, you really don't know what is happening over there. So from the SOX implementation point of view, having only one SAP has been extremely important issue. (Executive Vice President, Chief Financial Officer)

In conclusion, to create and implement internal control activities, Nokia applied social controls by designing the SOX coordinator role and providing the organization with enough resources. Finally, without a proper tone at the top, the exercise of identifying, documenting and designing the individual controls for each financial cycle would have been impossible.

Information and communication

Technical controls: intranet, training, financial cycle working groups and internal controls status meetings

Social controls: necessary resources, tone at the top, informal communications, physical arrangements

Training and communication are common ways to increase the likelihood that employees act as expected. Training can provide useful information about what actions are expected and how a person should perform his/her duties. Training can also have positive motivational effects, because it may create a greater sense of professionalism. Employees are also often more interested in performing well in jobs they understand better. (Merchant & Van der Stede 2016, 89.)

Training is a control element that can be applied both via technical and social controls. Technically, an employee may be required to participate in a yearly Code of Conduct training, and participation rates can be monitored by management. But much of the training also happens on the job and via informal channels with no predefined form.

Nokia used formal training mechanisms (classroom and web-based training) to communicate SOX requirements. When the SOX project was launched, extensive road shows and training programs occurred in which the core SOX experts travelled globally to provide face-to-face sessions for multiple organizational units. The local managers were provided with the materials and tools to continue the training of their organizations. The Internal Controls team also continued to offer regular training of SOX and internal controls after the implementation phase. Thus, sufficient resources

were provided to enable smooth and in-depth communications about SOX and internal controls.

Much learning occurs informally besides formal training (Merchant & Van der Stede 2016, 89), for example, via mentoring, coaching or informal communications and discussions. Nokia used informal training extensively. SOX was often mentioned in informal discussions to enforce the message that it must be taken seriously. In fact, the informal communications resulted in strong organizational myths, as one finance director described:

> "Now everybody's agreed to take this (SOX) seriously, we have used communications in a way that if we are not compliant with the SOX, some terrible things will happen and CFO will go to jail, and he will take you with him, if you are not like complying here." (Director, Finance and Control)

Bussmann and Niemeczek (2019) reminds that sustained implementation of the desired behaviors and values can be achieved with the help of training measures, but it also must be mirrored in the leadership behavior at all levels of management. At Nokia, the commitment of managers towards controls supported the message shared in training and communications. Employees felt that the managers' behaviors were aligned with the message of the communications. Furthermore, many times the Nokia employees perceived the formal training and communication methods also as a place to share experiences and learn from others. For example, Internal Control status meetings were also a forum to share instructions and experiences with unit SOX coordinators and Nokia Internal Controls team. A lot of informal information sharing occurred in addition to the formal agenda. Being part of the SOX community was important to many of the SOX coordinators, and the cooperation with this group in a way formed a social arrangement that people felt proud to be a member of.

Interestingly, the strong power of the word SOX also was visible in situations in which SOX was used in communications as a way to drive certain initiatives, even if those were not linked to the SOX program:

> "I have noticed that this SOX is sometimes utilized in situations where the topic doesn't have anything to do with SOX, so people have noticed that it's a very efficient way of getting some requirements through." (Head of Group Internal Controls and Internal Audit II)

As a result of the training and communications, many employees received the message that SOX was a mandatory requirement, and it was not an option not to perform the controls as requested. Even though the message was sometimes "intimidating", the employee perceptions were still more positive than negative.

Many interviewees explained this perception via the culture – when there was a clear message coming from the top, employees felt committed to succeed together to meet the common goal.

Monitoring activities

Technical controls: deviation reporting, management testing, self-assessment

Social controls: employee rotation, necessary resources, tone at the top, physical arrangements, social sanction

Intra-organizational transfers or employee rotations help transmit culture by improving the socialization of employees throughout the organization, giving them a better appreciation of the problems faced by different parts of the organization, and inhibiting the formation of incompatible goals and perspectives (Merchant & Van der Stede 2016, 92). Employee rotation was an important way to perform the control assessment (management testing of controls) in Nokia. Management testing was organized as peer-to-peer testing. This meant that the employees were rotating within the company to evaluate the controls performed by their peers.

The "testing teams" who were performing the control assessments included not only specialists from the Internal Controls team but also controllers from other business units. For example, a sales controller from Italy could attend the control assessment session for Poland's Sales Unit. The presence of a peer controller made the local team more comfortable, and they also shared best practices through the control assessment session. This increased the engagement with, and positive perception of, internal controls and control assessment by the local teams. The atmosphere was more engaging and relaxed in SOX testing sessions, compared to, for example, the internal audit sessions.

The employees were carefully selected to perform the management testing. The person had to be not only independent (e.g., coming from another subsidiary) but also competent to perform the testing to ensure the reliability of the testing result. The Finance & Control employees were the most familiar with the internal controls, so it was quite natural to select the controllers to perform the testing.

> "We set up a very heavy SOX internal control testing regime. All the testing was done by controllers…and we were doing that because we felt that the controllers were those who knew probably best what really happens. And we also were using the controllers because by sending people from one place to another place, we gained a lot of spin-off benefits around the best practice sharing, helping also to build the F&C community." (Vice President, Sales Unit Finance & Control)

And the controllers mostly took this task without complaints, because they felt they were able to benefit from sharing best practices during the testing.

> "For the person doing the testing it was maybe motivating to enhance the own way of working when you can share the practices and see how your colleagues exactly doing the same thing in other locations are doing their job. Of course this was of interest to many of the controllers." (Manager, Internal Controls)

The presence of a peer controller was also very important for the local team. Having a peer present (in addition to the SOX coordinators or the IC team member, who were often associated more closely to the auditors) made the local team more comfortable, and they also shared best practices during the control assessment sessions. One Senior internal controls specialist had had a rather bad experience when she went alone to perform management testing in a local sales unit in Poland. The next time she went there with a controller from another sales unit, and her experience was very different:

> "The first visit was a disaster, the local controller was very reluctant towards the testing session. But next time when I went there, I had another local sales unit controller testing with me, and I was trying to explain, that I have this controller with me here now, because I want him to also learn what you are doing here in Poland. So, the second time, the testing session went a bit smoother. It was easier for the local controller, because it was not only a global internal controls team doing the testing, but we had really a controller from the same kind of local sales unit joining the session. (Senior Internal Control Specialist)

Both a controller and a SOX coordinator or a member of the IC team was typically present in the testing session to ensure that the assessment was performed and documented appropriately. It was rather straightforward to run the testing sessions, because the testing procedures ("testing scripts") were described in detail in the control catalogs, so the actual flow of the sessions was very structured. Typically, 3-5 days were reserved to perform one management testing session in a subunit. As a common practice, local management made it clear before the session that everyone was expected to contribute on their part. Enough time and resources were reserved for the testing, so the local units felt they were provided with the necessary resources. These social elements of control enabled the testing sessions to run smoothly most of the time.

Most of the interviewees who participated in the management testing sessions described them positively. Most of the time, whenever there would be a testing session coming up in a certain unit (for example local sales or manufacturing unit),

the local management made it a priority and also made themselves available to participate in the sessions. For employees, the tone at the top, and tone at the middle, was clear. Management was usually always at the opening and closing meetings, and they also gave their teams a clear message that everyone should prioritize and contribute in any way they could to pass the management testing session. One SOX coordinator explained that she always included the local F&C management on the e-mail she sent to the local team prior to the management testing session to inform the team about the testing. Her experience was that local management immediately showed the team that it was a priority:

> "Quite often, the [local] finance and control head is commenting that 'okay, this is important thing, please be prepared, please provide everything that the testers will need, and please help them as much as you can,' and at least I haven't faced so often situations, where the controller would say that 'no, it's not possible to come here and do the testing, or I'm not participating, or we are not helping you,' or anything like that." (SOX coordinator)

Based on the interviews and observations at Nokia, it became clear that the control assessment sessions played an important role in organizational life. In fact, the sessions became important rituals in many business units, which can be viewed as a set of social arrangements, which are form of physical arrangements. In most of the cases, both local managers and employees took these events seriously and really put a lot of effort into making them successful. Once the testing was concluded, the good results were celebrated together. In case there were many deviations noted during the assessment, the teams made a great effort to fix the issues. There was a lot "succeeding together" spirit and teamwork occurring to achieve good results in the assessment.

> "Very good thing related to this SOX exercise and to the whole program is this community way of working. We have seen a lot of people and it's a very good example of the networking, it's a very good example of the team-working. It's getting to know people from a different culture, getting a deep understanding of the processes, understanding the differences between the processes and between the countries... It's been very eye opening and it's been a privilege to work within this organization." (Director, SOX and Internal Controls, Sales and Marketing)

Thus, the SOX testing sessions took on an important role in the social life of the subunits across the organization. This also made social sanction a powerful tool to ensure compliance. Social sanction was exerted in many ways and on several

organizational layers. For example, the progress and results of the control assessment were monitored in detail in the SOX steering group, audit committee and different management team meetings. This monitoring indicated which were the organizational units and individuals who were accountable and responsible for the control deviations identified through testing. No one wanted to be included on this "black list", which was a term mentioned by many interviewees. Being the one responsible for a control deviation meant that the whole team could not only lose their bonuses but could also be seen in a questionable spotlight in the management review. Conversely, when a certain team received good results from the control assessment session, they were celebrated and highly appreciated by management. Social sanction was a very powerful control, especially in countries such as China, where the fear of "losing face" is embedded into the cultural norms. One SOX coordinator described the control testing session as follows:

"So first of all the testing session is a really big thing for them [employees in China], and they really want to have the management involved in the opening meeting, and in the closing meeting, and they really want us to explain the details that why we are doing this and what we really want to see and what we are looking for, and so on. And then if there are any failures so it's not an easy thing for them, because somehow they are losing their face they feel that they have done really something wrong." (SOX coordinator)

The control assessment procedures were taken very seriously in several subunits. The SUs spent much effort to pass the control testing and to avoid any control failures. Everyone knew that the results of the control assessments were reviewed at a high level within the organization, and no one wanted to be on the top list of the deviations:

"I know as a controller, that, for example, if I fail, if I'm not to do a good job in SOX. SOX is one of those areas where the information goes to top management very quickly, I mean top management in finance is reviewing those results, and they see very soon that okay, 'Turkey, red flag, what's happening in Turkey' so I know that this is not the good area to make a lot of failures, so better to do good work here, ha ha [laughs]. So maybe that's enough motivation for me." (Business Controller, Local Sales Unit)

"Management team members were competing that oh, I'm on red, I don't want to be on red, and then after the meeting they came and asked, what do I need to do to get on green. So people realized that they don't want to be seen in red, if Olli-Pekka [CEO] or Rick [CFO] sees it. What I learned there is that there was

a competition on who is and isn't in the SOX red list. If you present it the right way to the management, people are so competitive that they start competing. And that helped a lot in the implementation." (SOX Program Manager)

Table 8 summarizes the social controls that were identified in the field. Table 8 also shows the social controls that were applied to address specific internal control components. This table is not all-inclusive, meaning that one could most likely find every form of social control to address every single internal control component. Thus, this table and this chapter have only highlighted some examples of the social controls found in the field. The purpose is to exemplify the interplay that can occur between the social and technical controls.

Table 8. Social controls within the internal control system of Nokia

FORM OF SOCIAL CONTROL	DESCRIPTION (MERCHANT & VAN DER STEDE 2016, 89-92)	SOCIAL CONTROLS IDENTIFIED IN NOKIA	INTERNAL CONTROL COMPONENT WHERE SOCIAL CONTROL WAS APPLIED
TONE AT THE TOP	Management can shape culture by setting a proper tone at the top.	SOX compliance was supported by the top financial management, both in talk and in action. The strong management commitment facilitated the implementation of technical controls. Tone from the middle was also visible.	Control environment Control activities Information & Communication Monitoring activities
INFORMAL COMMUNICATIONS	Training is a common way to increase the likelihood that employees act as expected. Training can provide useful information about what actions are expected and how individuals should perform their duties.	Nokia used informal communications extensively. SOX was often mentioned in informal discussions to reinforce the message that it needed to be taken seriously. Strong organizational *myths* resulted from the informal communications, such as "CFO and CEO will go to jail if we don't comply." Sometimes these myths were misused to address non-SOX related objectives.	Training and communication

Table 8. Social controls within the internal control system of Nokia [continued]

FORM OF SOCIAL CONTROL	DESCRIPTION (MERCHANT & VAN DER STEDE 2016, 89-92)	SOCIAL CONTROLS IDENTIFIED IN NOKIA	INTERNAL CONTROL COMPONENT WHERE SOCIAL CONTROL WAS APPLIED
SELECTION AND PLACEMENT OF EMPLOYEES	Finding the right people to do a particular job and giving them both a good work environment and the necessary resources can increase the probability that a job will be done properly.	Nokia made a conscious decision to minimize the use of external resources; instead, it wanted to build the SOX capabilities in-house. The Finance & Control organization was heavily resourced to meet the SOX needs.	Control environment Risk assessment Control activities Training and communication Monitoring activities
JOB DESIGN AND PROVIDING NECESSARY RESOURCES	Proper job design allows motivated and qualified employees a high probability of success. Necessary resources to do a good job may include information, equipment, supplies, staff support, decision aids, or freedom from interruption.	Nokia invested a lot in the SOX implementation. A centralized "SOX team" provided the necessary support to all units, including information, tools, instructions, staff support and decision aids. SOX coordinators had the opportunity to work closely with the business units, which motivated them. Nokia nominated SOX coordinators for each horizontal and business unit, whose task was to translate the SOX requirements into business terms and support their implementation.	Control environment Risk assessment Control activities Monitoring activities
GROUP REWARDS	Group rewards are incentives based on collective achievement, which can encourage creation of peer pressure on individual employees to exert themselves for the good of the group.	SOX compliance was part of the incentive plan for several functions and units globally. Employees perceived a high level of peer pressure to achieve the targets. The perception of *social sanction* was strong in cases where control deficiencies were identified.	Control environment Control activities Monitoring activities

Table 8. Social controls within the internal control system of Nokia [continued]

FORM OF SOCIAL CONTROL	DESCRIPTION (MERCHANT & VAN DER STEDE 2016, 89-92)	SOCIAL CONTROLS IDENTIFIED IN NOKIA	INTERNAL CONTROL COMPONENT WHERE SOCIAL CONTROL WAS APPLIED
EMPLOYEE ROTATION	Intra-organizational transfers or employee rotation help transmit culture by improving the socialization of employees throughout the organization, giving them a better appreciation of the problems faced by different parts of the organization, and inhibiting the formation of incompatible goals and perspectives.	Employee rotation was utilized in the control assessment sessions. In peer-to-peer control testing the employees shared best practices with the peers who worked within the same areas of business control in different countries.	Monitoring activities
PHYSICAL ARRAGEMENTS	Physical arrangements include office plans, architecture and social arrangements.	The control assessment sessions became organizational rituals, important social arrangements, in which local units wanted to succeed and celebrate good results together. The SOX/Internal Control status meetings and SOX Steering group also became a social arrangement in which either social sanctions or rewards were exerted.	Monitoring activities Information & communication

3.2.3   Internal controls system (objectives of controls)

Previous chapters displayed how technical and social controls were used to build an internal control system at Nokia. These different technical and social controls form the first layer of the internal control design process. The second layer is formed by the specific objectives that the different sets of controls have. In this study context, controls can have either performance or compliance objectives. Performance objectives may relate to achievement of organizational goals and creation of value, whereas compliance objectives seek to ensure compliance with laws and regulations.

This second layer forms the internal control system, which contains all the elements of the first layer.

COSO (2013) acknowledges the different roles of controls by identifying three main objectives for internal control. The first objective, effectiveness and efficiency of operations, is linked to performance. The other two objectives, reliability of financial and non-financial reporting and compliance with applicable laws and regulations, are linked to protecting value and ensuring compliance.

Traditionally, performance objectives have been associated with positive aims of control whereas compliance objectives with negative. For example, Cunningham (2004) refers to control objectives by using definitions of negative and positive aims of controls. A positive controls' purpose is to achieve the organizational objectives, whereas a negative control's purpose is to ensure compliance: "Compliance controls are primarily intended to meet governmental policies, without that first priority of achieving corporate objectives. Though particular governmental policies may be written in positive terms, from the corporation's viewpoint the goals are not principally about meeting its objectives (a primary, positive aspiration) but about meeting the government's objectives with the corporation's principal interest being to avoid violating laws or exposing itself to liability (a negative objective)" (Cunningham 2004, 275).

Tessier and Otley (2012a, 181) suggest that each control can manage performance and/or compliance to different degrees. The two objectives of controls (performance and compliance) are not mutually exclusive; rather, they are opposing forces that coexist to create tension. They illustrate this with an example from their field studies: "One of the organisations managed the performance of each unit as a way to identify theft (performance management to achieve conformance/assurance) and another was compliant with the industry's guidelines and best practices as a way of having a competitive advantage and saving costs (compliance management to achieve performance)."

This study supports the idea suggested by Tessier and Otley (2012a): Nokia had a vision to implement SOX controls not only to serve compliance objectives but also to address performance objectives. When compared to the benchmark companies[28], the number of controls in the SOX scope in Nokia was very reasonable, and each control was designed to serve the business needs.

> "When we benchmarked us with other companies, we did not go half as far as others had gone. During the project we had a clear business approach; we were looking not to only comply with SOX legislation literally, but along with

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[28] Nokia paid visits to other global companies (see chapter 3.1.1.) to benchmark how they had implemented SOX.

complying with it we wanted to check what fits to our business so that it (internal controls) would serve our business purposes. And as the years have now elapsed, it has been one of our focus areas, to each year seek for efficiencies to be able to reduce the number of controls and to really only have the needed controls in place, which are then being followed and tested…Cause there is always a risk in implementing this kind of things that things are being overshot and things turns into bureaucracy." (Senior Vice President, Group Controller)

Nokia's top management wanted to develop an internal control system that would serve the business needs of the company and harmonize the global processes. This meant developing the internal processes at the same time when designing the controls – and not just do the minimum for SOX compliance.

"If our whole objective is purely compliance, then we need to do it the most cost-effective way we can. But then, at the end of the day, what that means is that we can put a tick in the box and sign a statement to the SEC that we are compliant." (Vice President, Sales Unit Finance and Control)

"I think the controls are important, not necessarily for compliance but for the business. The biggest benefit would be the overall improvement to the communication within the business. The business understanding itself." (Sales and credit controller)

"I think that in general the business does an excellent job on the control side... I think the business as a whole gets it now…The business needs to understand what's happening in itself. And internal controls enables us to do that. It's less about reporting things on the New York Stock Exchange and more about understanding how the business works. And that we're all working in the same way and together to get to the end result. (Sales and credit controller)

At Nokia the internal control system was designed such that there was a clear linkage to the business objectives. For example, there was a sales process related control, according to which a credit check was to be performed for all new customers prior committing to any business transactions. From the sales manager perspective, this control was not just about complying with internal credit policy, but this was also a means to ensure that the customer has the ability to pay the invoice.

One of the learnings from the field is that once the controls are designed in cooperation with the business, they are much more likely to add value to the business. Thus, when designing the controls, one must keep in mind that "being compliant with the laws and regulations" might be a less appealing motivation to

perform controls than, for example, "the possibility of being able to manage the job well." And if the controls are designed in a way that doing a good job goes hand in hand with being compliant, the control is more likely to be adopted. Conversely, if people feel that the compliance requirements are simply added on top of doing business as an isolated procedure, it might be more difficult to sell the control to them.

3.2.4   Managerial intentions of controls

Managerial intentions refer to what managers are trying to achieve by implementing controls. Tessier and Otley (2012a, 181) have assigned these intentions to three categories:

1. Managers can decide what will be the consequences (rewarding and punishing use) of the achievement (or non-achievement) of performance and compliance requirements.

2. Managers can decide whether the control will be used in a way that promotes creativity (enabling use) or in a way that ensures predictability (constraining use).

3. Managers can decide which controls will have the main focus of promoting discussion and learning (interactive use) and which will be looked at only if there is some deviance (diagnostic use).

Next we will reflect on how these different managerial intentions were identified at Nokia.

Rewarding and punishing use of controls

While Simons (1995) suggests that compliance controls are managed using only punishment (and not reward), Tessier and Otley (2012a, 173) argue that both control objectives (performance and compliance) can be linked to reward and punishment. As chapter 3.2.2. described in more detail, Nokia tied SOX compliance into employee incentives.

> "It was in a person's incentives very clearly stated that they must succeed in SOX." (Process Development Manager, Group Internal Controls)

Thus, Nokia used both rewards and punishments to ensure SOX compliance. These were visible not only in terms of material rewards and punishments, such as monetary compensation or status upgrade but also in terms of social sanction being

applied, as described earlier. In fact, social controls played a significant role in rewards and punishments at Nokia in the process of driving SOX compliance.

Enabling and constraining use of controls

The concept of a dual role for controls has gained importance in the literature (Ahrens & Chapman 2004; Demski & Feltham 1976; Mundy 2010; Warren 1960; Wouters & Wilderom 2008), where it is predominately described as competing roles that create dynamic tension in an organization. That is, management control systems are used to exert control over the attainment of organizational goals and also to enable employees to search for opportunities and solve problems (Mundy 2010, 499). Tessier and Otley (2012a) call these roles enabling and coercive uses of controls.

According to Adler and Borys (1996, 62), enabling controls increase technical efficiency through the writing of best practices, whereas coercive controls are meant to "enforce compliance from employees assumed to be recalcitrant or irresponsible." Similarly, Ahrens and Chapman (2004) associated coercive controls with bad outcomes, such as mistrust, resentment, and robotic management, and enabling controls with positive outcomes, such as flexibility. However, Tessier and Otley (2012a) argue that controls themselves are neutral. Thus, whether the controls are seen as good or bad should be distinguished from the controls' dual use (enabling and constraining). While the dual role of controls is a design attribute of MCS, the quality of controls (good vs. bad) is not. According to Tessier and Otley (2012a, 174), the quality of controls refers to whether a control is effective, efficient, economical, etc. (or not) and whether it has unwanted consequences, such as slowing down innovation, causing dysfunctional behavior, etc. (or not). This is different from the definition of the dual role described previously which views both roles as desirable.

Most the internal controls are constraining by nature. Thus, the internal controls used at Nokia (as in any company) were used to constrain employees from doing things that could hurt the company objectives. Employees in the Finance & Control function especially appreciated the controls, because the controls helped them perform their job better: They often struggled with the sales and marketing teams especially, who were driven by their sales incentives. As one Sales and Credit controller explained the situation:

> "If we didn't have some of these controls in place, it'd be chaos. But your marketing, your PR team, even your sales team, will probably say, "these are so annoying, I want to open this [new customer account] and I want to open it now." Because they've gained a really good customer, and they're going to be a really

good customer. But because of the controls we have in place, I get to check that customer out, I check the background, I ensure that they are really financially as robust as we need them to be. And the sales team would prefer I didn't, because let's just say that the salesman is targeted to sell, and he doesn't really care what happens to it once it's sold." (Sales and Credit Controller)

Tessier and Otley (2012a, 181) emphasized that constraining and enabling roles are applicable to both compliance-related and performance-related controls. For example, so called "Newspaper Test"[29] is a control whose purpose is compliance, because it ensures managers will respect the law and business codes of conduct, but it is an enabling role, because it allows managers to be creative in their search for business opportunities. A similar example at Nokia was a control in the Indirect Purchasing cycle: there was a control that required an indirect purchase to be negotiated by the sourcing organization in the cases where the purchase value was above 200KEUR. However, there was an exception called "sourcing waver" – this implied that, when managers would have a justified reason not to involve the sourcing organization but to manage the purchasing activity by themselves, they had to be able to defend this decision later, for example, if this question was asked in the management testing session. Thus, Nokia used the control in both enabling and constraining ways.

To conclude, when designing an effective internal control, it is not a question of choosing between enabling and constraining uses of controls: Both uses are needed.

Interactive and diagnostic use of controls

Managers use interactive controls to involve themselves regularly and personally in their subordinates' decision activities (Simons 1995, 95). Interactive controls facilitate and promote communication, focus attention (Adler & Chen 2011) and promote learning (Ferreira & Otley 2009). At Nokia, the interactive use of controls was demonstrated by closely monitoring the SOX program and control performance in internal meetings and communications. Control practices and their assessment were discussed intensively at various meetings to focus managers' attention and promote learning.

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[29]   "The Newspaper Test" refers to a control that guides employees, before making a decision, to consider whether they could defend their decisions if they were made public. This control does not give an absolute restriction as to what is accepted and what is not, but it rather relies on an individual's ability to make decisions that aligned with the company Code of Conduct.

"It [the importance of SOX] was very clearly communicated in all of the top level F&C [Finance & Control] meetings. The Group Controller was taking this seriously. And in all of the SOX steering group meetings all the unit F&C heads were participating, so they got the message." (Process Development Manager, Group Internal Controls)

The interactive use of controls was also visible in the way the control descriptions were constantly modified. The central SOX team would constantly ask for feedback on the controls, and the SOX coordinators would help to modify the controls and support the implementation of the changes. This way employees also felt that they were able to participate in to the control development work.

"You know, some of the Nokia control points weren't always applicable to us [subunit] in the right way. And they were changed, for the [subunit] business, very kindly by Nokia. And that enabled us then to get value added out of it. Doing something just for the sake of doing it is a pointless exercise. The business needs to have added value, whereas, you know, just putting a signature on a document that is meaningless is a really pointless exercise." (Sales and Credit Controller)

Diagnostic controls represent controls that are only used when deviances from the established targets are observed. Diagnostic use of controls was a crucial part of the SOX program from the beginning, as the very core of SOX has the requirement for management to assess and report on the internal control deficiencies and material weaknesses within the control systems. The control deviations were identified via control assessment and deviation reporting and monitored via internal reporting systems and management meetings, steering groups and audit committee.

Following the first few years after the SOX program was established, the intensity with which the controls were discussed interactively was reduced, and the focus was more on the diagnostic use of controls.

3.2.5　Presentation of the controls

Presenting the controls acts as a bridge between managerial intentions and employee perceptions and can influence how the controls are perceived (Tessier & Otley 2012a, 175). In this study, the presentation is the first step of the internal control implementation: It's about how the managers introduce the idea of the controls to employees. At Nokia, the SOX controls were presented not only as a legal requirement but also as a way to improve the internal processes. In fact, for many corporate functions (such as finance, IT and sourcing), the SOX implementation

project was actually a great opportunity to drive their own process development initiatives, along with the SOX objectives. As the Head of Indirect Sourcing explains:

> "One of the challenges that we always had in the beginning is that there was no mandate. So, there was no rule that said that, you know, if you have a purchase order of a million or a hundred thousand or whatever, you have to go to procurement to negotiate it; you can just do it yourself. And we had to sort of sell ourselves into the organization. We had to convince marketing, that we can add value. We had to convince IT that we can add value, we had to convince the senior stakeholders, that we can negotiate the consultancy deals. So, we had to sell ourselves at every opportunity, and of course it was a bit tiring. So, when Sarbanes and Oxley came, it actually made it so much easier for us, because basically then there was suddenly this control in place, that if there's a deal of over 200 000 euros, you have to go to indirect sourcing to let them negotiate the deal. And then we either negotiated, or then we just give approval that okay, you know, you can do this yourself, because we can't add any value, or we are too busy, or whatever. So, suddenly with Sarbanes and Oxley, we had a de facto mandate." (Head of Indirect Sourcing)

As the preceding quote demonstrates, some of the corporate functions saw SOX as a useful tool that helped to enforce their own processes and procedures that the business units were obligated to follow. Prior to the establishment of the SOX legislation, Nokia had gone through several unsuccessful development projects aimed at introducing new control practices and processes, such as an instruction to use the central sourcing service when negotiating the contracts. However, only when they became part of the SOX implementation project did those efforts to introduce new controls become successful. SOX especially provided a mandate for many organizational functions (e.g., HR, IT, finance and sourcing) that they could use to establish rules and procedures by simply referencing that they are part of the requirements of the SOX legislation with which the company was obligated to comply. As a result, such controls were followed much more obediently than before SOX.

SOX gained a strong legitimacy in Nokia. Managers and leaders noticed that the usage of the word "SOX" was a very efficient way to get some requirements through. This also led to situations in which SOX was used as an excuse to get things done, even in cases that had nothing to do with the requirements of the legislation itself. When a certain task was introduced as a "SOX requirement," it was considered as "a must do," and most people would perform the task without questioning. For example, a manager might have told his team that they could not commit to a certain

expenditure because of SOX. However, SOX controls did not include provisions on what kind of activities could the company money be used for; it only appeared as requirements on how the money spent should be approved and entered into the company books and records. One SOX coordinator commented this as follows:

"You could use SOX to force things, but there is no guarantee that you use it to enforce the right things…Some things are not so fast and flexible, not only because of SOX requirements but because the way people use them to do things. So if you are a control-minded person, it gives you the stick that you can use: you can use it (SOX) as an excuse, if certain things are not going as they should, you can sort of say that okay, but because we have all these SOX requirements, so we can't, you know, do this and that, and it's been delayed, and we have to ask the approval, and the guy haven't given it, and bla bla bla.." (Director, Treasury Finance & Control)

"I think SOX was used wrongly to little bit like scare the people especially on those early times. It was a strong word, so can justify many things. Maybe the concrete example of misusing the SOX was that when you have many development project for competing of the resources, you have like 15 projects you want to do this year to develop this and this and that, but you only can do 10, so there was this type of the category 'this is SOX Must do,' so they became always number one and two and three on the list. And sometimes the reasoning was really not the SOX, but somebody just wanted to put the SOX there as reasoning, so nobody dared to be against you, because then you would go to jail with the CFO." (Local Sales Unit Controller)

"Many times people used SOX as an excuse, to easily drive certain matters…Maybe I was sometimes guilty of doing that myself, too..It was like when you raised up the "SOX-flag," the resistance was gone… So, SOX was used to drive matters which would have not gone through if SOX would have not been used there." (Vice President, Finance & Control, Manufacturing and Logistics (previously Head of Shared Accounting Services)).

As just described, the presentation of controls affected how the controls were perceived in Nokia's case. For example, controls related to using the centralized sourcing service were not followed in the past when they were introduced as an internal compliance procedure. However, the same controls were adopted when introduced as SOX controls. "SOX compliance" was a powerful way to present almost any control- related idea in the organization. To sum up, in Nokia's case the controls were presented as mandatory compliance requirements.

3.2.6   Employee perceptions of controls

"Nokia was used to working in a way that you are allowed to challenge just about everything. And now looking back, it is surprising how little the "internal control exercise" was being challenged. It was taken like "OK, this is now a situation that this will not be challenged, but this is simply a "must do." (Vice President, Finance & Control, Manufacturing and Logistics, previously Head of Shared Accounting Services).

Tessier and Otley (2012a, 175) suggest that employee perceptions can be different depending on how the controls are presented. According to them, for example, if an organization has a culture of "no red tape"[30], the controls are more likely to be perceived positively, if they are presented as a way to improve performance rather than as a way to ensure compliance. At Nokia, the controls were presented as a way to ensure compliance. As the previous multiple examples demonstrate, there was a strong "SOX compliance" tone in the presentation of controls. However, the resistance towards the controls was rather low and employees mostly perceived the controls with positive attitude.

A prior study suggests that employee perceptions of controls with a performance objective tend to be more positive than when the controls have a compliance objective (Cunningham 2004). As chapter 3.2.2. discussed, the SOX controls in Nokia had both performance and compliance objectives. However, there was only a very limited negative perception among employees towards the controls. In fact, most perceptions were either neutral or positive. Thus, the interesting question is: why did some employees have positive and some neutral or negative perceptions? Next we will take a closer look at these various employee perceptions.

Positive perceptions

The key driver behind the **positive** perceptions was not just related to how the controls were *presented* (all SOX controls were presented primarily as a means to ensure compliance). Instead, what was important in this case was also how the controls were *designed*. First, the controls that were designed to meet the business objectives along with the compliance objectives were mostly viewed positively. An employee had to understand how performing the control would relate to the business

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[30]   In "No red tape" culture excessive regulation or rigid conformity to formal rules is considered redundant or bureaucratic and hinders or prevents action or decision making.

process, such as selling the product to a customer, purchasing goods or services for the company, or optimizing the supply chain:

> "Some SOX controls, which I feel are really good ones, are the ones we are analyzing our business, and we are periodically analyzing that how our business area is developing and how we could change some things and how we could easily do something with a much lower price, or something like that, so.. maybe that kind of thing, when they [people working in supply chain organization] are analyzing some SOX controls or performing the controls, so maybe they can also say, that 'I really get some good ideas how to do things better when I was performing this control." (Senior Internal Control Specialist)

Second, employees who viewed the controls positively also better understood the content of the controls and why those needed to be performed. Nokia made a big effort to translate the control requirements into practical guidelines. In addition to the official control catalogs, there were many training materials, new employee induction sessions, practical handbooks and job descriptions that helped employees to understand in detail what they were supposed to do.

> "We have intranet online training available for buyers which they can reach out to anytime." (Transactional buyer)

The Nokia culture was open for questions, and senior managers took the time to support employees, took the controls seriously and led by example. When someone resisted or would not perform a control, those cases were immediately escalated to senior management. An important point was also the fact that it seemed important to Nokia that the controls "make sense" to the employees. The control descriptions were constantly changed based on employee feedback. Employees felt that that they were also able to participate into the control design. Especially in the budget literature, it has already been suggested that participation affects attitude and motivation (see the summary of these studies by Shields and Shields (1998)).

Positive perceptions were linked also in situations where employees felt that the controls helped them to perform better. At Nokia many employees recognized that writing down the job descriptions and tasks gave conformity that the necessary tasks were being done. This was especially seen as important when new employees were joining the team. As the employees explained:

> "This really helps to have clear instructions. If the person is changing to other job and new (person) is coming, they can give those instructions and it will be easy for the newcomer perform his duties." (IT SOX Coordinator)

"After SOX we have increased writing down instructions. Five or ten years ago a new employee would not have been given this clear and precise job description…When a new employee enters a job, she must be given clear instructions instead of saying that "just start doing as I instructed you yesterday." (Accountant 1, Shared Accounting Services)

Third, it seems that performing well with the controls was very important for the employees who had strong emotional ties to the controls. The social controls played a significant role in creating these emotional ties. People were motivated by the group rewards, but also there was a fear of ending up on a "black list." Aiming to achieve a company-wide target together gave the employees a sense of belonging and they felt their job was meaningful and important. Based on the observations and interviews, it became clear that for many people in Nokia, the SOX controls were not just about compliance. Instead, people felt proud on the way they were able to contribute and add value to the corporate initiatives that were monitored on a group level by senior management. People seemingly felt proud when they could show their knowledge on SOX and how their work was linked to SOX compliance.

Neutral perceptions

Negative or positive perceptions usually occurred when an employee had emotional ties to the controls. Some perceptions were also neutral. Employees followed the controls, because they were a "mandatory requirement." In fact, as many interviewees explained, when a certain requirement was introduced as a SOX requirement at Nokia, it was easy to get the buy-in, and very few people would resist. Indeed, in a way, "compliance with SOX" became a norm[31] in the organization. People followed the internal control requirements and in many case those became part of the normal business processes.

"I think we've, a lot of what we did is we changed the mindset of the people in the company…Now we've come to a point where everybody's been brainwashed and educated on SOX, and that we need to have approvals and POs [Purchase Orders], everything in place before we do something. Same with the approval rights and all these things. People are now used to it." (Business Controller, Product Design)

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[31] Organizational norms define appropriate attitudes and behaviors that guide its members' attitudes and behaviors (O'Reilly & Chatman 1996, 166), forming part of the organizational culture.

"I think the SOX controls are part of the everyday life at Nokia. People don't question them, or see them isolated from the daily business activities." (SOX Coordinator)

Negative perceptions

Employee perceptions of the controls were mainly positive or neutral. However, in a global multinational company, it is not possible practically to face no resistance. According to Merchant and Van der Stede (2016), controls such as pre-action reviews can produce negative attitudes. Thus, it was no surprise that some employees experienced SOX controls with a negative tone. But what was behind the negative attitudes towards the controls? Two key factors can be identified.

First, the employees who had negative perceptions typically did not understand why they needed to perform the control or simply did not see a reason why they should perform it. Some employees in the IT department, for example, who had been working for the company for 20 years, did not see the purpose of changing their way of working, because "things were working fine the way they had been always done." Interestingly, even though there were some employees with a negative perception, they did perform the controls despite their emotions. This was due to the social controls, meaning that any non-compliance was easily escalated to top management, who took compliance seriously.

"If our big managers [IT senior management], if they don't support, so nothing happens. At the beginning, because there were a lot of change resistance and everybody was kind of 'arrgh, SOX, this is horrible,' and still there are some change resistance, but at the time we needed a lot of escalation power. And also today, if there are some difficult areas, so just to go to our unit heads, so they are just saying that 'do it,' and, so that is really needed, so.. Power is needed and senior management support, really, if that is not in place, so no successful story." (Senior Development manager / SOX coordinator for IT)

Second, if the social controls were not systematically applied in the technical controls' implementation among the employees, they were more likely to have a negative perception. In other words, the likelihood for a negative perception was higher if there was a lack of social pressure, employee rotation, informal training or tone from the top.

Neglectful perceptions

According to Berlo (1960), employees' individual attributes, such as the socio-cultural environment in which they evolve, influence how they perceive controls. Indeed, there were also some employees who perceived the controls as undesirable because of local circumstances. For example, some employees in Mexico experienced that the SOX controls did not fit into the requirements presented by the local business partners.

> "In Mexico, I would say that it was something totally different than in other countries. They really have only one or two big [local business partners] and we are working only with them. They are actually managing the whole market in Mexico, and actually they are saying to us, that what they want us to do. Even if Nokia has a big market share in Mexico, so still actually the [local business partners] are so strong, so they are actually saying how we can operate there, in that market area…So when we were doing the testing, we noticed, that they are not following the global processes. Even if we have SOX and the controls there, and we are instructing that you need to work this way, but it's not just possible." (Senior Internal Controls Specialist)

As that quote demonstrates, there were some very strong local contexts where the employees felt that following the global controls were not an option if they wanted to do business in that particular market. As was the case in that example, the internal controls related to contract creation, pricing and credit limits were designed in such a way that the local business partners did not accept the terms. Thus, the salesmen saw following the controls as a trade-off of doing business. In fact, their perception was neglectful towards the controls, meaning that they knew what was required by the SOX controls, but they did not comply with the controls. This was different than in the cases where the perception was neutral or negative, because in those cases the employee usually did perform the controls even though their perception was not positive.

Another example of a neglectful perception would be a salesman working in a market with high pressure to meet customer demands. One Sales and Credit Controller demonstrated the situation as follows:

> "He (salesman) wants to go off and do his own thing in his own way and without any control on him. He wants to spend our money without having to be questioned about it… The salesman is targeted to sell, and he doesn't really care what happens to it [the business deal] once it's sold. So his main priority isn't the business as a whole. I think internal controls can take on the business as a whole. "(Sales and Credit Controller)

To summarize, in the case of Nokia, employee perceptions were *positive* towards the controls in cases where 1) controls were designed to meet both the compliance and performance objectives; 2) the controls made sense to the employees; and 3) employees had emotional ties to the controls, facilitated by the social controls. However, employee perceptions were *neutral* in cases where they had no strong emotional ties to the controls but there were insufficient grounds for not complying. Furthermore, employee perceptions were *negative* towards the controls in cases where 1) employees did not understand the controls or did not see a reason to comply or 2) social controls did not facilitate the implementation of technical control. Finally, there were also employees who were *neglectful* of the controls. For them the local circumstances did not support complying with the controls or there was strong friction between the compliance and performance objectives of controls. This led to them ignoring the controls as compliance was seen as a trade-off of doing business.

The following table summarizes the key explanations for different types of employee perceptions at Nokia and whether or not they performed the controls.

Table 9. Employee perceptions of internal controls and control performance

EMPLOYEE PERCEPTIONS	POSITIVE	NEUTRAL	NEGATIVE	NEGLECTFUL
EXPLANATION FOR THE PERCEPTIONS	Perceptions were positive when 1) controls were designed to meet both the compliance and performance objectives; 2) the controls made sense to the employees; and 3) employees had emotional ties to the controls, resulting from the application of social control.	Perceptions were neutral in cases when employees did not have strong emotional ties to the controls but there were insufficient grounds to not comply.	Perceptions were negative towards the controls in cases where 1) employees did not understand the controls or did not see a reason to comply, or 2) social controls did not facilitate the implementation of technical control.	Perceptions were neglectful in cases where local circumstances did not support complying with the controls or there was a strong friction between the compliance and performance objectives of controls.
CONTROL PERFORMANCE	Employees performed the controls as they saw them as useful or they wanted to "succeed together."	Employees performed the controls but did not have strong emotions towards them. They did it because "everyone had to comply." SOX became a norm.	Employees performed the controls, even though they experienced negative emotions and change resistance towards the controls.	Employees did *not* perform the controls and simply ignored them.

3.3 Display and discussion of the key results

3.3.1 Summary of key findings

One of the core questions underlying this study setting is the question of how to design and implement an internal control system. The current study around the topic overlaps with several different academic fields, including management accounting, general management control research and organization theory, which all include theoretical concepts that relate to how internal control systems should be designed. Previous literature suggest that controls must be interactive, balanced, dynamic and adaptive, cost effective and embedded in the daily operations rather than superimposed or loosely coupled (see, e.g., Cardinal, Sitkin and Long 2004; Chapman 2003; COSO 2007; Picket 2001, 21; Simons 1991).

Oliviero (2002) and Picket (2001) have suggested that firms must invest in control competence so that internal controls may be better designed and managed throughout the organization. Arwinge (2010, 139) concludes that the knowledge and skills required by an internal control architect are significant, and the task of appropriately designing a system of internal control should not be underestimated. The current literature has not yet profoundly addressed how firms design and implement their internal control systems and how those controls are perceived by the organization.

The design of the internal control is contingent upon a number of factors internal and external to the firm and controls should thus be based on the specific circumstances of the firm. Jokipii (2006) studied the internal control structure and internal control effectiveness through the contingency characteristics that describe the organizational context. Her results state that prospector strategy and high-perceived environmental uncertainty do matter more in internal control than other contingency characteristics, such as organization structure and size. However, Woods (2009, 80) found that control systems were contingent on organizational size: Large-scale operations tended to have more formalized controls, characterized by a tendency to have more documented control systems.

At the core of this study has been the assumption that design of internal control does not just cover the technical controls or controls over financial reporting. Instead, it is crucial that organizations consider the social controls' design and impact. It is also not enough to design the internal control from the auditors' and accountants' perspective. Instead, strong focus should be on the perspective of those who ultimately are responsible for maintaining the controls – the business management.

This study has looked for the micro-level factors within the implementation of a system of internal controls under a legislative requirement. In more detail, the purpose of this study is to understand how can an organization design an internal

control system (comprising internal control components, control types, control objectives and managerial intentions) and successfully implement it to the organization (presentation of controls, employee perceptions of controls and, finally, control performance). The aim has been to understand the interrelationships between the technical and social controls within the design and implementation process and refine a framework to address these multiple aspects.

One of this study's key findings is that the social controls can play a significant role in implementing technical controls. This study suggests that these two control types should not be looked isolated, because their continuous interplay will affect how the controls are perceived and performed. In this case study, Nokia made a conscious decision at the beginning of the project to avoid SOX compliance becoming a "tick the box" exercise. In doing so, Nokia applied a variety of social controls to overcome the potential difficulties, such as resistance or ceremonial adaption of control, in the technical control implementation.

The social controls at Nokia – the tone at the top, group rewards, informal communications, social sanction, job design, providing necessary resources, employee rotation and physical arrangements – facilitated the technical control requirements' implementation. Compliance with the SOX controls became embedded in the company culture within the Finance & Control community, that is, it was built on shared traditions, norms, beliefs, values, ideologies, attitudes and ways of behaving (Merchant & Van der Stede 2016, 92). Employees shared a common understanding that compliance was something to pursue and commit to. Employees had strong emotional ties to the controls and that helped them to make sense out of the controls. These emotions included strong commitment and loyalty and a strong respect towards superiors within Nokia.

A prior study (Scapens 2006) suggests that if the control system is initially more open to design and creation, later on it will be more or less taken for granted among the many users and, therefore, more difficult to change. This was not the case in Nokia. Due to the strong culture and strong application of social control, Nokia was able to change the control style from an informal to a more formal internal control without significant change resistance and inertia. SOX coordinators had a key role in this positive change: they acted successfully as mediators between the horizontal and business units and the central SOX team. This decreased the change resistance, because the SOX coordinators were able to adapt the HQ requirements to the business units' processes.

Previous research has not addressed the issue of how management should implement internal controls for them to become effective. In this study's view, this is a question about social control: A well-functioning system of internal control is not about setting up technical controls and expecting that employees will blindly comply. Instead, it is a matter of how managers apply the social controls. Leadership

involves multiple elements of social control; how the leaders demonstrate example, how they communicate, allocate resources and apply social rewards or sanction. This study highlights the importance of the role of tone at the top and middle management in influencing internal control practices and recognizing the importance of employee's attitudes and emotions. This study finds that employees are more likely to perform the controls when they find them meaningful: they must feel on a personal level that compliance matters. In Nokia's case, a strong "succeeding together" attitude toward a clear goal that was a top management priority turned the "additional burden" into a feeling of being part of something important. Employees felt that their personal input at work made a difference. They experienced strong emotions toward the controls, and they performed them as a result. On the contrary, employees who did not have strong emotions, i.e., felt neglectful, were less likely to perform the controls. Perceptions were neglectful in cases where local circumstances did not support complying with the controls or if there was strong friction between the compliance and performance objectives of the controls.

In this study the empirical evidence was reflected through three existing fields of literature. First, the existing literature around the comprehensive view of internal control (see, e.g., COSO 2013) was used to analyze the concept of internal control from a holistic perspective. Second, these components of internal control were reflected through the concepts of technical and social control and the interrelations between these elements were studied. Here Merchant and Van der Stede's (2016) control definitions were used as the primary theoretical concepts. Third, the framework developed by Tessier and Otley (2012a) was used to explain how the holistic system of internal control was designed and implemented. This study added the components of internal control and control performance by the employees to the framework. The decisions made by the management to design the internal control system were at the core of this study's analysis, along with how the employees perceived and performed the controls presented by management. A refined framework was developed to explain the research findings. This is illustrated in Figure 13.
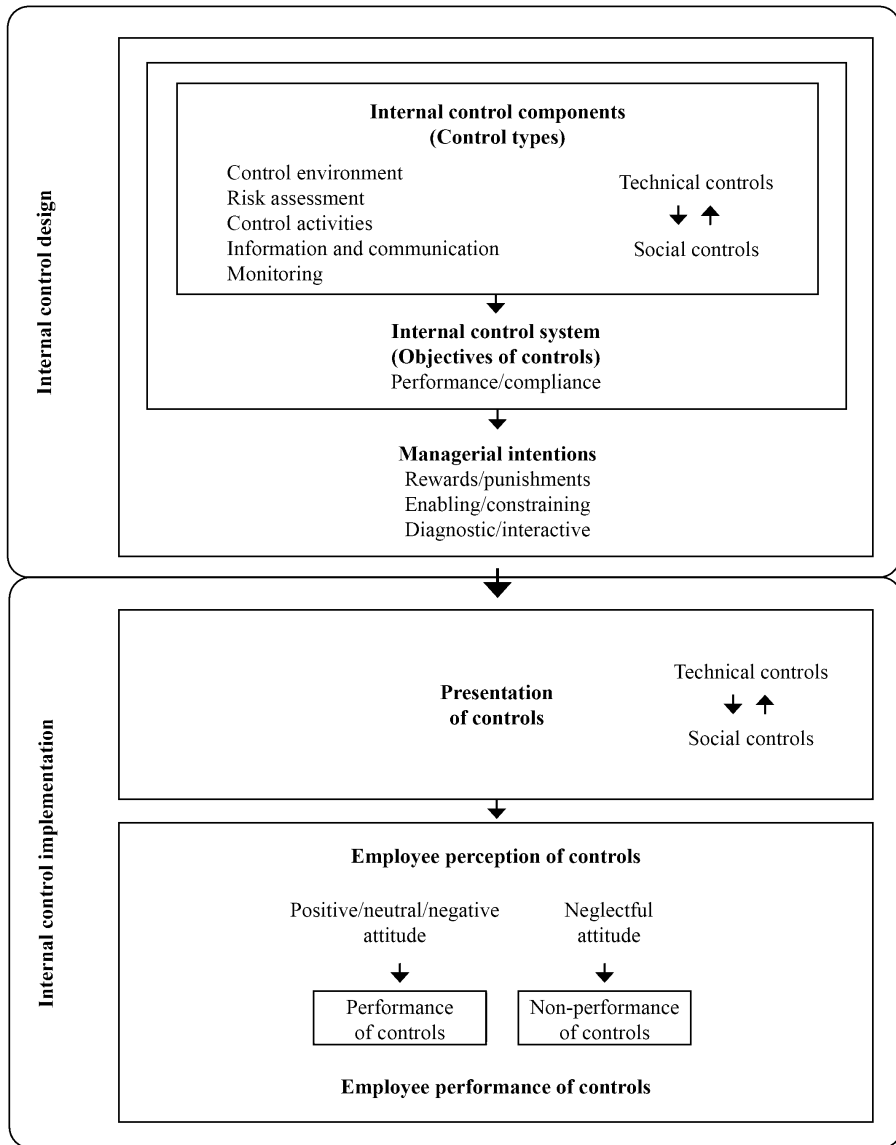
Figure 13. Refined framework for designing and implementing a system of internal control (Based on the frameworks by Simons (1995) Tessier and Otley (2012a) and COSO (2013))

3.3.2   Interplay between technical and social control in IC design

The internal control (IC) components – control environment, risk assessment, control activities, information and communication and monitoring activities – were identified to understand how Nokia designed its system of IC and translated it in

practice into the context of a SOX compliance program. This was done by first listing the technical SOX controls designed by Nokia. Second, the social controls that Nokia used to introduce these technical controls were identified. This study's findings suggest that managers can use both technical and social controls in the design of any of the five IC components, which are all interlinked. These sets of controls form the first layer of an IC design framework.

The arrows between technical and social controls illustrate that these control types are in constant interaction with each other. Both technical and social controls are applied in all of the IC elements; together, they form an effective system of internal control. Social control elements, such as tone at the top, physical arrangements and informal communications, affect the internal control system as whole; thus, it is not even possible to study them isolated from the complete system of internal control.

The second level of the framework comprises different control systems that have a specific objective. Management control systems are defined as "systems, rules, practices, values and other activities management put in place in order to direct employee behavior" (Malmi & Brown 2008, 290). As such, the control systems are sets of social and technical controls. Different control systems have specific objectives, performance and compliance being the two main objectives. In their framework, Tessier and Otley (2012a) identified four control systems (strategic performance, operational performance, strategic boundaries (compliance) and operational boundaries (compliance). In internal control the emphasis is on operational objectives. The framework was modified to consider IC system as scope of analysis, while recognizing that an IC system may include the same elements as the control systems identified by Tessier and Otley.

Tessier and Otley (2012a, 181) suggest that each control can manage performance and/or compliance to different degrees. Whereas traditional literature has put internal controls strictly in the box of technical controls with compliance objectives, this study recognizes that a system of internal controls comprises both technical and social controls and can have both performance and compliance objectives. This is line with the practical literature (COSO 2013) that suggests that internal control has three main objectives. The first objective, effectiveness and efficiency of operations, is linked to performance. The other two objectives, reliability of financial reporting and compliance with applicable laws and regulations, are linked to protecting value and ensuring compliance. Each control can manage performance and/or compliance to different degrees. The objectives of controls (performance and compliance) are not mutually exclusive; rather, they are opposing forces that coexist to create tension.

Nokia did not only want to comply with regulatory requirements, but it also wanted to design the controls to meet the business needs and to facilitate the

harmonization of global financial processes, such as purchasing, sales, HR, accounting and manufacturing. Thus, this study's findings suggest that internal controls can be designed to include both compliance and performance objectives to ensure they become embedded in the daily activities of organizational life. When technical controls are designed to serve only a compliance objective, they are more likely to encounter resistance to their implementation. Yet, internal control can simultaneously have a performance and compliance objective: For example, a control that demands a sales manager to ensure proper due diligence check when selecting a new sales agent can lead to better business performance (when dealing with a reliable and reputable partner) and, at the same time, mitigate the compliance risk (by limiting the risk of corruption and fulfilling the SOX requirements). When designing new controls, it is worth considering both the compliance and performance objectives to increase the possibility of gaining positive employee perceptions.

The third part of the internal control design framework represents managerial intentions, emphasizing the different choices managers can make regarding the internal control system. Managers can decide what will be the consequences (i.e., rewards/punishments) of the achievement (or nonachievement) of performance and compliance requirements. They can also decide whether the control will be used in a way that promotes creativity (enabling) or in a way that ensures predictability (constraining). Lastly, managers can decide which controls will have the main focus of promoting discussion and learning (interactive use) and which will be looked at only if there is some deviance (diagnostic use).

Managers can use the controls in multiple ways to successfully implement a system of IC. Internal controls can be managed using both rewards and punishments. Compliance controls have traditionally been associated with punishments. For example, Simons (1995) argued that organizations reward performance, punish nonperformance and punish noncompliance but do not reward compliance. However, this study suggests that organizations can include compliance objectives in the performance appraisal process and reward employees on attaining both compliance and performance objectives.

Internal controls can be used simultaneously in either enabling or coercive ways. Internal controls, such as approval processes, have traditionally been considered as rather coercive forms of controls. However, internal controls can also be used in ways that promotes creativity, as the previous examples of the Newspaper Test and the Purchase Waiver (see chapter 3.2.4) demonstrated. Furthermore, diagnostic use of internal controls is needed to keep track of control deviations. Internal controls can also be used interactively to ensure they are aligned with the current business processes.

These three different layers form the *internal control design*. Ultimately, they are all within the boundaries of the same box. This means that the technical and social controls are all present and interacting with each other in all three layers.

3.3.3 Interplay between technical and social control in IC implementation

Once managers have designed the system of IC, they make decisions on how to present the controls, which, together with the control design, affect employee perceptions of the controls. This study's framework jointly calls the presentation of the controls, the employee perceptions and the performance of controls the *internal control implementation*. This chapter will specifically address the second research question: How does the presentation of controls impact the employee perception and performance of the controls?

The Tessier & Otley (2012a) framework originally presented the "presentation of controls" outside the boundaries of the first three layers (in this study's context, the "internal control design"). Hence, their view separates the presentation of controls from the layers where the technical and social controls interact. This study recognized the role of social control as being a key ingredient of the technical controls' presentation. Thus, the technical and social control were added to the layer as well (see Figure 13).

This study suggests that the presentation of controls as "mandatory compliance requirements" can be widely accepted and adopted when there are strong social controls supporting this presentation, such as tone from the top, group rewards, training and informal communication. At Nokia, technical controls were accepted and widely adopted when they were presented as a mandatory compliance requirement. As a result, the "SOX mandate" was also used to drive other initiatives outside of SOX, due to its strong power within Nokia.

Based on the view of this study, a well-functioning system of internal control does not result out of enforcing a set of technical controls and expecting that employees will blindly comply. Instead, it is a matter of how the managers apply the social controls. If we can understand how we can make employees view the controls as meaningful, they are more likely to comply. Even if the controls would be presented with a heavy focus on compliance.

Having said that, we must also acknowledge that not only can social controls facilitate the adoption of technical controls, but they can also facilitate the ceremonial adoption or even circumvention of the controls, if applied wrongly. The whole system of internal control can be jeopardized if managers use social control to foster unethical behavior or to create fear. In fact, some Nokia interviewees mentioned that SOX was used in a way to scare people: "If you don't comply, the

CFO will go to jail and he will take you with him.*"* One must pay careful attention to how employees perceive the message. If a strong tone at the top emphasize that "*everyone must comply*," top managers must avoid simultaneously creating a culture in which employees start to avoid bringing compliance issues to management attention.

Another scenario of misusing the power of social control is when managers "real" message is conflicting with the control objective. For example, managers may ask the employees to complete the mandatory ethics training (technical control), but at the same time deliver an unwritten message (social control) that what matters are the business results, not *how* the results are actually achieved. In this situation the employee more likely will ceremonially complete the technical control (ethics training) but continue using unethical means to reach the business deal, if he believes that the business results matter more than ethical behavior.

This study's evidence also suggests that the implementation's success was closely related to the role of social control in the organizational unit under scrutiny. In the cases where employees bought into the idea of social control, they were more likely to perform the technical controls. Social controls appeal to the emotional and nonrational elements within employees (Ray 1986, 288). By acknowledging this nonrational element of social control, it can be considered that whether an individual will comply with a control requirement or not is not always a result of rational decision making. There might be some nonrational elements involved in their decision to comply or not to comply, i.e., to perform the control or not. Previous literature suggests that positive emotions play a transformational effect, whereas negative emotions have an influential effect upon decision making (Babin & Babin 1996; Bagozzi et al. 2003; Khodayari & Hanzaee 2011; Perugini & Conner 2000; Schlösser et al. 2013). These self-conscious emotions and neutralization techniques (Sykes & Matza 1957) provide an explanation of why people do not always act rationally. In other words, employees do not always follow the controls as a result of a rational decision making; instead, employees' emotions affect how they decide to act. These emotions are tied with the employee perceptions of the controls.

Prior studies have suggested that employee perceptions are negative towards controls with a compliance objective. For example, Cunningham (2004) suggests that perception of controls with performance objective tends to be more positive than perception of controls with compliance objectives. Adler and Borys (1996, 61) also argue that employees' attitudes are positive when formalization enables them "*to better master their tasks,*" and will be negative when it "functions as a means by which management attempts to coerce employees' effort and compliance.*"*

This study challenges this view by suggesting that employee perceptions can be positive towards controls with compliance objectives and in the situation when formalization aims to coerce employees. This can happen when the coercive control

is accompanied by the shared understanding that compliance with the controls is important and something to reach for. At Nokia, when social controls were applied to coerce employees, the perceptions were positive in most cases or at least neutral. This is similar to the ideas suggested by Kraus et al. (2017) who found that managers were able to avoid resistance to the implementation of formal controls by using "ideological talk" as a form of social control. In their case, "through the interplay with the predominant ideological control in place, the formal management control system became vested with symbolic significance."

But why in this case study did the presented mandatory compliance requirements gain a positive perception from most of the employees? Why were the employees motivated to add to their workload for compliance purposes? This can be explained partly with organizational culture aspect. A strong "succeeding together" attitude towards a clear goal that was a top management priority turned the "additional burden" into a feeling of being part of something important. Employees felt their personal input at work made a difference. Employees experienced strong emotions towards the controls, which were affected as a result of complying with the controls. In cases where employees did not have strong emotions, i.e., they felt neglectful, they more likely did not perform the controls.

This study shares Tessier and Otley's (2012a) view by suggesting that employee perceptions are external to the design and presentation of control systems. While the design of internal control systems and the way they are presented do influence how controls are perceived, employees' individual attributes, such as the socio-cultural environment in which they evolve, also play a role, as along with their level of knowledge regarding the controls (Berlo 1960) and how they feel about the controls. In addition to this, the ignorance of the controls may also be affected by a local culture in which following the controls are seen as a trade-off of doing business.

While the limited view of IC has clearly distinguished internal controls as separate checks and balances, this study suggests that, in fact, the internal controls work best when they are embedded in daily actions (i.e., other management control practices). This has a clear connection to employee perceptions: an employee is less likely to perceive the control positively if it is introduced as something additional and separate, especially if the control is introduced primarily to prevent wrongdoing. Instead, if the controls make sense to employees and helps them perform theirs job better, their perceptions are more likely to be positive.

This study found that much of the social control occurred via informal communications. SOX was strongly present in the daily discussions of both employees and management. Management sent the message via this informal communication that SOX was a priority. Some rather strong words were used in some communications, and some people described that the SOX message also included elements of fear: "No one would dare not to comply with SOX." This fear

was one factor that fostered the control implementation in this case study. However, shared emotions, such as fear, have also been found to harm organizational processes and outcomes, for example innovation (Vuori & Huy 2015, 1). Thus, managers must also be cautious when selecting the words they use to communicate. For example, in the case of Enron and Lehman Brothers, management was famous for the aggressive language they used to engage people in meeting business objectives. If the managers create fear – by the way they talk and act – it might result in employees doing "whatever it takes" to reach compliance technically and not being willing to openly discuss potential issues concerning noncompliance.

Vuori and Huy (2015, 1) conducted a study of Nokia to understand its rapid downfall over the 2005–2010 period from its position as a world-dominant and innovative technology organization. They found that top and middle managers' shared emotions during the smartphone innovation process caused cycles of behaviors that harmed both the process and its outcome. They found that middle managers' internally focused fear reduced their tendency to share negative information with top managers, leading top managers to develop an overly optimistic perception of their organization's technological capabilities and neglect long-term investments in developing innovation. In their case the fear resulted as a failure to openly share information about bad news. This raises a question could the fear found in the study of Nokia lead into a situation where employees start hiding control failures and are not willing to speak up about potential concerns regarding internal controls? No evidence was found of this kind of behavior in this case study. The fear of failure was in this case a factor that supported achieving the compliance. This study suggests that emotions matter in compliance and social control is the key mechanism to affect those emotions. However, it should be noted that there might be a thin line between motivation (to perform the controls) and desperation (to avoid controls failure). Too aggressive social control may create too strong fear that ultimately turns against the organization's objectives. Thus, managers must be careful when considering how to apply the social control.

Alvesson and Kärreman (2004, 423) emphasized the interface between social and technical forms of control and argued for a more symbolic, meaning-focusing view of bureaucratic and output measurement controls. This study's key finding is that social controls are indeed needed for a global implementation of technical controls. Employees are more likely to have positive perceptions of technical controls when they have an emotional tie to the control system. Furthermore, this emotional tie can be significantly strengthened via the application of social controls, such as tone at the top, job design, informal communication and group rewards.

It is worth acknowledging that not all social controls are consciously designed. For example, the unofficial competition for "being on the green in SOX management testings" was a result of the strong tone at the top and many other ingredients of an

internal control system. Both of these consciously and unconsciously designed social controls resulted in SOX compliance becoming part of the norms and traditions within the organizational culture.

3.3.4   Refined framework

As previously illustrated, the Tessier and Otley (2012a) framework was used to explain the case study findings (see Figure 13). Whereas the framework was originally applied to discuss the various levels of management control systems, it was used in this study to explain the design and implementation of the internal control system in a case study setting. The five COSO (2013) elements were added to the framework and linked to the concept of technical and social control. In the core of this study was the aim to understand and explain the interplay between technical and social control.

The framework was refined with the following dimensions:

1. The internal control components – control environment, risk assessment, control activities, information and communication, and monitoring activities – were added to the framework's first layer. All five of these elements can take the form of a technical or social control. This case study has demonstrated that these elements are interlinked and connected to each other. The arrows between the technical and social controls illustrate their connection. For example, a code of conduct is an element of internal control that can be fostered via both technical and social controls. It can be addressed from a technical perspective via written guidelines, mandatory trainings and certifications that employees must sign. It can be viewed from a social perspective through the tone at the top – management promoting ethical business conduct in both talk and in action. To be effective, both elements – social and technical – are needed and they impact one another.

2. The different elements of the framework were distinguished as "internal control design" and "internal control implementation." The Tessier & Otley (2012a) framework originally presented the "presentation of controls" outside the boundaries of the first three layers (in this study's context, the "internal control design"). This study recognized the role of social control as being a key ingredient of the technical controls' presentation. Thus, the technical and social control were added to the presentation layer as well.

3. This study has recognized that in addition to positive, negative and neutral perceptions, employee perceptions can also be neglectful. The difference

between a neutral and neglectful attitude is that in the latter, the employee simply ignored the controls, whereas in the first, the employee performs the control.

4. The framework was further developed by suggesting that based on employee perceptions, they can either perform the desired controls or ignore them by not performing them.

A prior study has identified but not yet comprehensively addressed the need to see management control systems holistically by acknowledging the interplay between social and technical controls. Simons' (1995) Levers of Control framework has been useful to study the management control systems, but it has also been criticized for not taking into account the interactions between the different levers and by treating employees as passive actors. This study has brought together the incoherent study around internal control and the interactions between different levers of control. It has also recognized that internal control and management control overlap: many management controls can also be defined as internal controls. In fact, internal control system works best when it's part of the management control system, instead of being viewed as isolated checks and balances. This study will contribute to both the internal control and management control literature. These contributions are addressed in more detail in the concluding chapter.

4   Conclusions

4.1   Theoretical contributions

Prior literature has called for more case studies to learn how firms design, apply and oversee their systems of internal control (Arwinge 2010). This study answers this call and is among the first to research internal controls through a case study (see also Arwinge 2014; Pfister 2009) by addressing the interactions between the technical and social controls within an internal control system. The objective of this study has been to address the following two questions:

RQ1   How do social and technical control interplay in the design and implementation of an internal control system?

RQ2   How does the presentation of internal controls impact employee perceptions and performance of internal controls?

The first question is about the actions taken by management regarding the control system design and presentation of controls. The focus of the study is in understanding the interplay between technical and social controls within these processes. The second question is about how the controls are perceived by employees, which impacts their attitudes and, ultimately, the implementation's success. The important difference between these two questions is that the employee perceptions are outside of management's influence. Separating the managers' intention and employee perceptions allows us to emphasize that these two groups of individuals' views of controls might deviate from each other's. This study will propose some refinements to the existing control framework literature while answering these two questions. Next, the research findings will be discussed from the theoretical, managerial and legislative perspectives.

This study contributes to the literature on both management control and internal control systems, bringing these two concepts closer together. It looks at the internal control system holistically, instead of circumscribing only certain aspects of control. This study increases our understanding of how the internal control system functions as a whole and how its different elements interact. Prior research has mainly focused

on examining only particular internal control components, such as the control environment (D'Aquila 1998; Patelli & Pedrini 2015; Ziegenfuss 2001), control activities (Barra 2010), communication (Hooks et al. 1994) or risk assessment (Mills 1997). However, an effective system of internal control builds on the combination of all five intertwined components, so all five components and their interaction were evaluated. Thus, this study will contribute to the literature on the comprehensive view of internal control (see also Arwinge 2010; Pfister 2009).

The management control literature has previously considered internal control to be mostly focused on ensuring that accounting records and information systems are reliable (Simons 1995, 181) and has suggested that internal controls are mainly action controls, such as physical or administrative behavioral constraints (Merchant & Van der Stede 2016, 87), whereas this study widens the view and brings the definition of internal control closer to the concept of management control. For example, Simons (1995, 42) has listed codes of conduct as being the most basic form of a boundary system, and Merchant and Van der Stede (2016) have suggested that tone at the top is a typical element of a social control. Both Simons and Merchant et al. clearly have distinguished these definitions from the concept of internal control. However, based on this study's conclusions, code of conduct, tone at the top and the commitment to ethical standards comprise the basic foundation for effective internal control. This view has already been present for decades in the practical literature (COSO 1994, 2013). To conclude, many features provided by the wider definition of internal control could be viewed as important components of any management control system. This study suggests that to be effective, internal control should be part of management control, instead of checks and balances which are isolated from the other management control practices. Internal controls work best when they are embedded in daily actions, i.e. in other management control practices and business processes. Employees are less likely to perceive the controls positively if they are introduced as additional duties without a clear connection to the daily work. Instead, if the controls make sense to the employees and helps them to make their job better, their perceptions will more likely be positive.

Prior studies have suggested that the level of interaction between technical and social controls is important and requires more attention. For example, Alvesson and Kärreman (2004) found that social and technical controls are tied rather than being substitutes as Ouchi (1979, 1980) argued. According to Alvesson and Kärreman (2004), technical controls communicate ideals and have a strong symbolical content (social aspect), but they are also influenced by the organization's beliefs and behavioral norms. Moreover, Bartunek (1984) described how social controls influence technical controls, and Abernethy and Chua (1996) suggest that technical controls can help rationalize social components of the control package. This study

sheds light on the interaction between technical and social control in the context of internal control.

This study has recognized that internal control is not just about manual checks and procedures, such as signing off documents or securing assets with physical locks. Equally as important is how people conduct internal control – how they design, implement, maintain and monitor control as part of their day-to-day activities (c.f. Pfister 2009, 22) – and how they apply social control, which is not always formally designed or documented. Thus, internal control comprises both technical and social control, which are interlinked and should not even be evaluated separately when assessing the effectiveness of internal control. Interestingly, previous research has not addressed the issue of how management should implement internal controls for them to become effective. In this study's view, this is a question about social control: A well-functioning system of internal control does not result from enforcing a set of technical controls and expecting that employees will blindly comply. Instead, it is a matter of how managers apply the social controls. Employees are more likely to comply if they find the controls meaningful. Managers must understand these employee perceptions and emotions and apply social controls to address them.

Thus, a crucial element in effective internal control is the focus on social control. Prior studies have suggested that leadership has a strong impact on unethical financial reporting (see, e.g., Mihajlov & Miller 2012; Tourish & Vatcha 2005). Hence, leadership traits can craft an environment characterized by either integrity or unethical practices (Patelli & Pedrini 2015). Leadership involves multiple elements of social control; how the leaders demonstrate example, how they communicate, allocate resources and apply social rewards or sanction. This study highlights the importance of the role of tone at the top in influencing internal control practices, providing more support for the idea that social control matters.

Whereas the limited view of internal control has suggested that internal controls are mainly checks and balances performed by accounting professionals (Simons 1995), this study emphasizes the role of internal controls as a holistic process. The most crucial elements of internal control are not the individual technical controls, such as approval procedures and system restrictions but, instead, the human interactions. This study's evidence suggest that an effective internal control system design consists of all of the five internal control elements – control environment, risk assessment, control activities, information and communication, and monitoring activities. Furthermore, the technical controls performed by the accounting professionals (c.f. Simons 1995) are not enough to ensure an adequate design for internal control; internal control is also a responsibility of any employee within an organization. Managers have a variety of social controls available to engage employees to consider themselves accountable for the controls. These social controls may take the form of informal communications, physical arrangements, tone at the

top, and so on. Based on this study's findings, it can be concluded that if the social controls do not support the idea of the technical controls, it is more likely that the internal control system will not provide the intended benefits, such as helping to meet the operations, reporting and compliance objectives.

The SOX project in this case setting meant a significant change from an informal to a more formalized control environment. Previous research has suggested that changes in control style from informal to formal can lead to dysfunctional behavior and distrust of the management (Johansson & Baldvinsdottir 2003). At Nokia, even though there was some change resistance, the introduction of formal controls created a very limited amount of dysfunction in the organization or distrust of the management. This finding is interesting, as previously at Nokia it had been natural for people to challenge additional requirements and potential changes introduced by headquarters.

Furthermore, the findings of this study also suggest that technical controls are more likely to encounter resistance in their implementation when they are designed to serve only a compliance objective. Hence, there is a better chance that they will become embedded in the daily activities of organizational life when the controls are designed to include both compliance and performance objectives. Controls can also be managed using both punishments and rewards.

This study argues that a control can have performance and compliance objectives simultaneously and that employee perceptions of such controls can be positive. Employee perceptions are not only a result of the presentation of the controls; the control design can also have a significant effect. Adding on to the previous literature, this study suggest that employee perceptions can also be neglectful, in addition to positive, negative or neutral (Tessier & Otley 2012a). A neglectful perception often leads to employees not performing the control, whereas in cases when their perceptions are negative, employees might still perform the control. In this study, it seems that the employees who bought into the idea of social controls were the ones who performed the controls. Conversely, the employees who ignored the controls were unaffected by the social controls. This supports the view that internal controls should not be viewed as purely technical controls (Simons 1995), because the control systems' effectiveness depend on the application of social control. Controls can be deployed via automated system-based controls, which might not need the efforts of the social control. However, a human will always be a central factor in the internal control system. It is all about the people at the end of the day.

Scapens (2006) suggests that if the control system is initially more open to design and creation, later on it will be more or less taken for granted among the many users, and therefore more difficult to change. This explains why many organizations have failed in their technical control implementation projects. Thus, this case study's preliminary assumption could have been that the introduction of new technical

control requirements would create change resistance and inertia and that the control system would be rather difficult to change. However, this is not what happened in Nokia. In fact, one of the underlying reasons for the successful change was the corporate culture, and its underlying values and beliefs. Ultimately, employees perceived the controls as being part of the institutionalized environment, part of "how things are done here." Very few employees felt that the controls were "targeted for individuals," where avoiding the controls would have been an option.

Successful change also requires strong leaders (e.g., Kasurinen 2002, 331). Tone at the top is one of the profound elements of a comprehensive internal control system. While not ignoring the role of top management, this study also emphasizes the tone at the middle. Top management might be very distant from the shop floor level, especially in global and fragmented organizations, and that is when the role of the local managers becomes more crucial. If they do not demonstrate the importance of the controls through their daily actions, it is more likely that the employees next in line in the chain of command are not engaged to implement and follow the controls, even though there might be very a strong tone at the top in HQ.

Thus, this study suggests that *support from middle management* is also a key factor in a control system implementation project. The actions of top management in global companies may not be visible in all levels of the organization. Instead, the example shown by middle management might play a much more critical role. For example, employees at a certain factory might see the factory manager as a much greater authority than the company CEO whom they have never personally met. In this case study, all subunits that had been successful in implementing the internal control requirements had middle management representatives who were committed to build strong internal controls and demonstrated a great example. To conclude, the success of implementing effective control systems very much depends on the actions of middle management, i.e., on the "tone from the middle."

This study answers calls for research that explores the different elements of control systems and their interrelations (Chenhall 2003; Malmi & Brown 2008). It adds to the management control literature by looking at the holistic perspective on control systems and considering both technical and social controls as part of the control package. Until today, only a limited amount of study has been conducted covering both of these control types (see, e.g., Abernethy & Stoelwinder 1995; Alvesson & Kärreman 2004; Ditillo 2003). This study is also one of the first ones to integrate the concept of internal control into the concept of management control.

This empirical analysis, with its focus on how the internal controls are designed, presented to and perceived by employees, has provided new insights into how different types of controls can interact. Specifically, this research has sought to address the interplay between control system rational design and socially constructed realities (Berry et al. 2009). This study adds on to the existing literature by

considering how employee perceptions of controls impact performance of control, i.e., employees can either perform or not perform the controls presented by management. Thus, this study answers calls to further study what affects employee perceptions of controls (Adler & Borys 1996) and the impact of these perceptions on organizational performance (Tessier & Otley 2012a, 182). Finally, this study makes an important contribution to the literature around internal control by strengthening the comprehensive definition of internal control and bringing internal control closer to the concept of management control.

4.2   Managerial and legislative implications

Legal compliance and internal control requirements are often seen as additional technical controls that must be integrated into companies' operations. Technical controls, such as system controls, approval policies, procedural checks and mandatory training programs, are often easier to design than the social controls. This is because social controls, to be effective, must be applied systematically and in line with the written rules for a long period of time to see their effects. The effects of social controls are also more difficult to evaluate or study, because they cannot be seen as a "tick the box" exercise.

However, this study shows that social controls can play a significant role in the design and implementation of technical controls. The difficulties in implementing new technical controls can be minimized via systematic application of the social controls. Tone at the top, group rewards, informal communications, job design, employee selection and rotation can facilitate the implementation of the new technical controls' compliance and/or performance objectives. Instead of being interpreted negatively, compliance can become embedded in organizational norms, traditions and belief systems with a positive meaning. We need strong leaders, tone at the top and conscious decisions to invest in the time, people and resources required to build an effective internal control system to make this happen. This study delivers important message to business leaders: emotions matter. Whether it's about implementing controls, business strategy or innovation, we should not ignore the power of emotions. Especially during the era of technology and artificial intelligence, people are still an integral part of the organizational processes. The most powerful way to lead and manage people is by impacting their emotions. This is done through a systematic and authentic application of social control.

A recent example of an organization that failed in compliance is the case of Wells Fargo, a U.S.-based bank. Wells Fargo was slapped with a $185 million fine in 2016 for "widespread illegal" sales practices that included opening as many as two million deposit and credit-card accounts without customers' knowledge (Glazer 2016). As a financial institution, the company had stringent technical controls in place,

accompanied by risk management processes, compliance and internal audit functions. However, the company failed because of the lack of a decent social control. In this case, misconduct was widespread in the retail unit, even though Wells Fargo had control systems that were overseen by its board of directors. So, what went wrong? An investigation commissioned by the board found that a warped corporate culture, a decentralized organizational structure, and poor leadership were to blame (Healy and Serafeim 2019). This case is not the first or the last example of an organization that fails in compliance because of the lack of ethical leadership, but it gives us a concrete reminder of why the social controls matter.

Managers have a variety of options to choose from, when designing an internal control system. These options are not mutually exclusive: Social and technical controls can serve both compliance and performance objectives. Internal controls can be used interactively to ensure they are aligned with current business processes. Diagnostic use of internal control is needed to keep track of the control deviations. An effective internal control can be used both to enable and to coerce employees. For example, a code of conduct may provide guidance on the business conduct boundaries but simultaneously provide freedom for employees to use their own judgment in making decisions that are for the good for the company. Internal controls can also be managed using both punishments and rewards. While social sanction can be a powerful tool for managing compliance, managers can reward compliance both in monetary terms and through social appreciation.

Once an internal control system is designed, managers can decide how to present the controls. Presentation of controls is determined by the question of how to communicate the control requirements to employees, that is, what channels, forms and language should be used? The SOX exercise could be "sold" to the company in multiple ways – as a quality program, an audit program or a process improvement program. In this case study, the way to introduce SOX was as a compliance exercise. The primary message was that "this is a compliance matter and we have no other option than just to comply". As a result, SOX gained a strong legitimacy within the organization, and in fact the whole word SOX received a symbolic meaning. It was enough to say the word, and people knew it was a priority. As a side effect, "SOX mandate" was also used to drive other initiatives outside of SOX due to its strong power within Nokia. Thus, the way the controls are presented can lead into many intentional but also unintentional consequences.

After managers have designed a comprehensive internal control system, they must remember that the employees might not perceive it the same way they do. To enable successful change, managers must understand how to impact employee perceptions, which is not always in the hands of management. What is certain is that the social controls play a significant role here. Application of social controls is indeed needed to successfully implement new technical controls. Employees must

also accept the idea of those social controls; otherwise, a risk exists that employees do not perform the controls and simply ignore them. This case study found that when control implementation was unsuccessful, social control was not utilized to drive compliance. This leads to the conclusion that powerful use of social control affects control performance, and the lack of it can, in fact, be the root cause for control failures.

To summarize, this study will add on to the previous literature by bringing new evidence of the importance of social controls as a counterpart to the technical controls. What is challenging – from both practical and theoretical viewpoints – is the difficulty of capturing the whole variety of social controls, because they are not always consciously designed or documented. Ultimately, social controls are about people. This study suggests that employee perceptions of controls are linked to their emotions. Hence, selling the idea of the controls to employees can be successful when taking into consideration their emotions: Managers can consider different options to facilitate positive perceptions towards controls.

And what about the role of SOX? What role did a "mandatory legal compliance requirement" play in the design and implementation of internal control? In the case of this study, the legislation played a key role. The fact that this was a legislative requirement was the key reason why the project gained management attention in the first place. However, a key learning is that legal compliance could easily become only ceremonial if it is not supported by social controls and a healthy organizational culture. The initial purpose of SOX was to prevent and detect financial accounting fraud, so the role of social control must indeed be taken into consideration when preparing for SOX compliance. Otherwise, an organization can easily end up in "technical compliance" only without having a culture that guides the everyday actions.

This study has built a bridge between management control and internal control systems. By understanding the overlap between these concepts and related frameworks, such as LOC or COSO, companies can leverage internal control to implement a strategic control system. Such an expansion means that efforts invested in complying with SOX requirements are beneficial beyond protecting the company from fraud, financial misreporting, legal liabilities, and misappropriation of assets.

When considering the study from the regulators' and prosecutors' point of view, the key learning is that legislations around internal controls are indeed needed. Well-functioning internal controls are in key role in the fight against fraud, corruption and irresponsible employee behavior. However, those legislations should not be enforced by purely focusing on the technical side of compliance. The social side of the control systems in place should matter, too. Luckily, we already have evidence that culture is becoming a key topic to consider by the authorities, too. Notably, the most recent

DOJ guidance[32] on evaluating corporate-compliance programs does not recommend that companies adopt a specific set of policies or procedures. Rather, it instructs prosecutors to assess whether a company has "incorporated the culture of compliance into its day-to-day operations." And compared to the previous guidance from 2017, this new guidance places significantly more weight on company ethics and the "tone set at the top" in determining whether a compliance program is comprehensive and effective. For example, the new guidance states that "As a threshold matter, prosecutors should examine whether the company has a code of conduct that sets forth, among other things, the company's commitment to full compliance with relevant federal laws that is accessible and applicable to all company employees." In the past few years, the Department has repeatedly expressed in various speeches and written statements that "compliance is a culture, not just a policy."

To summarize, this study aimed to gain more understanding of the implementation of internal controls and shed light on the factors that lie beyond formal SOX compliance. These study results can help organizations gain more out of an improved system of internal control rather than just being SOX compliant on paper. Furthermore, these study findings can help companies to better understand how to foster a culture of compliance while implementing formal compliance policies and procedures. This study provides useful insights for companies who are in a process of implementing systems of internal control, for example, due to listing on the New York Stock Exchange and thus being subject to SOX legislation. Also companies in a process of building Ethics & Compliance programs with a focus on anti-bribery, anti-trust or privacy issues, can benefit from these study's findings.

4.3 Evaluation of the study and future research opportunities

It is important to assess the validity and reliability of any reported research findings. Various ways are available to evaluate qualitative research. The common objects of measurement are the study's validity and reliability. Neither of these measures should be compromised in the conduct or reporting of field research (McKinnon 1988, 53). *Validity* is concerned with the question of whether researchers are studying the phenomenon they purport to be studying (McKinnon 1988, 36). In a qualitative study, researchers should be able to demonstrate that their findings are

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[32]   In April 2019, the Criminal Division of the Department of Justice (DOJ) issued new guidance on how it will evaluate corporate-compliance programs when deciding charges and negotiating settlements. It is the department's most detailed guidance on the evaluation of corporate-compliance programs to date. As such, companies developing compliance programs should consider the new guidance a vital resource. (U.S. Department of Justice Criminal Division 2019)

based on valid observations or interview responses, not, for example, on responses that have occurred in untypical situations (Koskinen, Alasuutari, and Peltonen 2005). Validity can be impaired if a researcher has designed or conducted the study such that the researcher is unintentionally studying either more than or less than the claimed phenomenon (McKinnon 1988, 36). *Reliability* instead, is concerned with whether or not the researchers are obtaining data on which they can rely. Reliability can be impaired if the data are not independent of the "accidental circumstances" under which they were gathered (Kirk & Miller 1986, 20).

Field studies face different specific threats to validity and reliability and may use different strategies and tactics to minimize these threats. The validity and reliability of this study are interlinked; that is, tactics that support increasing the study's validity may also increase its reliability. McKinnon (1988, 37) has listed four main types of threats: observer-caused effects, observer bias, data access limitations and complexities and limitations of the human mind. These threats are all valid in this study, and must be considered.

Observer-caused effects may occur as reactive effects to the observer's presence in the phenomenon under study (McCall & Simmons 1969, 78). Case study methods are typically criticized because of the researcher's presence in the setting: it may cause the participants to change their behavior and conversations. As a result, the researcher is not observing the natural setting but rather one that is disturbed by their presence. The risk for observer-caused effects is especially high if the participants perceive the researcher's role as a "management spy" (McKinnon 1988, 37). The researcher was very much aware of this threat during her time in the field, especially during the interviews. Strategies to overcome this threat included designing and applying the interview questions diligently, employing follow-up and clarifying questions in the interviews, taking notes during the interviews, and observing the interviewees' nonverbal communications. The researcher used observation to reflect on whether the "real life" during the unofficial discussions, control testing sessions, and team meetings aligned with the responses provided during the interviews.

Observer bias may be caused by a tendency to observe the phenomenon in a manner that differs from the truth, i.e., the researcher's selective perception and interpretation. This bias is such that it is a problem of management rather than of elimination (McKinnon 1988, 38). The potential for observer bias is present not only in the process of observing actions and behavior but also in the researcher's casual conversations or formal interviews and in data analysis. Thus, in this study, the researcher accepted the existence of observer bias and aimed to overcome it during all phases of the research. This was done, for example, by appointing a coach for the researcher from the case company. The researcher tested her study findings and observations by discussing her study with her coach from Nokia to validate them and discuss potential variations in perceptions. The researcher also reflected on her

research findings with a research colleague who had also used the same case company in his research.

Data access limitations may result from a limited time in the field or limited access to documents, events, or people. One of the most frequently cited requirements of good field research is that the researcher spends a substantial length of time in the research setting. The longer the period of interaction, the larger the number of events for the data set for analysis (McKinnon 1988, 40). The researcher ultimately spent time in the field for 4 years and 7 months. During this time, she conducted 45 interviews, took 11 field diaries, and observed the study setting during interviews and within her daily duties in control assessment, internal meetings, trainings, and workshops. Spending time in the field as an employee and conducting data triangulation enabled her to cross-check the data gathered via different methods.

Complexities and limitations of the human mind was a natural threat in this study. These can occur if the research subjects attempt to mislead the researcher either intentionally by being deceitful or unintentionally by forgetting things. The researcher was very aware of these threats and considered her own behavior and that of the interviewees while in the setting. Employing probing questions, using data triangulation, and asking the same questions from multiple informants helped to manage this risk.

One evident challenge of this study is also the long period between gathering empirical data and reporting the results. Most of the empirical analysis took place rather soon after the data were gathered in 2012. Due to personal reasons, the study progress was very slow during 2013–2017. However, the researcher felt comfortable finalizing the study, as the field notes were carefully documented, and all interviews had been recorded accordingly. In addition, after each interview, the researcher made notes and incorporated them in the data analysis. Naturally, there is a chance that the researcher's interpretation of the research data can change over time. However, as time went on in this case, the key findings only became clearer in the researcher's interpretation.

Lukka and Modell (2010, 462) suggest that validation in interpretive management accounting research is about convincing readers of the authenticity of the research findings while simultaneously ensuring that explanations are deemed plausible. According to them, authenticity is largely a matter of preserving the emic[33] qualities of research accounts, whereas plausibility is intimately linked to the process of abductive reasoning, whereby different theories are applied to advance thick explanations.

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[33] emic perspective is that of a native insider, in contrast to the more detached and neutral etic (outsider) perspective.

One of the challenges of this study is the potential generalizability of its research results across companies, industries, organizations, regulatory structures and cultures (Kinney 2000, 88). The internal control concept is complex itself, so the results of the research might also reflect this inherent complexity, especially in a case study that studied only one organization.

While this study explicitly considers the views of managers and their attempts to manage their control system and the employee perceptions, one of the limitations is that it does not consider the employees' contributions to the control system's design. This criticism has already been presented to the original Simons' (1995) framework (see, e.g., Tessier & Otley 2012a, 182), which considered employees as passive actors. This study presented illustrations of how employees may perceive the controls presented by their managers and whether the employees perform the controls or not as a result of this perception. The next step for future research could be to analyze how the controls are then reformed as a result of the employee perceptions. In other words, it would be beneficial to further study the interrelations between technical and social control: For example, in the cases when employee perceptions were negative or neglectful, how did the managers react to these perceptions? How could managers apply the social control to make it more likely that employee perceptions will change towards more positive, or at least neutral, perceptions? As the results of this study suggest that employees' emotional ties towards controls matter in the success of their implementation, it would be interesting to study the emotions in more detail.

Another suggestion for future research is that the framework developed in this study could be tested in other types of control implementation projects in which a legislative force plays a key role, such as IFRS implementation, an anti-bribery compliance program, or privacy compliance program implementation. Conversely, it would be interesting to repeat this study setting of designing and implementing a system of internal control but in a non-SOX context where the adoption of the controls does not stem from legal requirements. The same framework could also be applied to address the design and implementation of any other control system.

5   Abbreviations

Key terminology referred in this study

20-F	A form filed by a company with the SEC which is completed and submitted by foreign companies which have shares traded on a US exchange.
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRSP	Center for Research in Security Prices
IC	Internal Control
ICR	Internal Control Reporting
LOC	Simons' Levers of Control framework (1995)
Material weakness	A deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis." (PCAOB 2007).
NYSE	The New York Stock Exchange
PCAOB	Public Company Accounting Oversight Board
SEC	U.S. Securities and Exchange Commission
SOX	Sarbanes-Oxley Act of 2002

Case company related abbreviations

F&C	Finance & Control
FSP	Financial Services Platform
GLAD	Global Summary of Aggregated Defects
HQ	Headquarter
HR	Human Resources
IIP	Invest In People
INS	Indirect Sourcing
SU	Subunit

6   List of References

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7   Appendices

Appendix 1. Definitions of key control concepts

This study involves a variety of control concepts, partly overlapping with each other, so below are listed the key control definitions relevant in this study.

CONTROL DESIGN	*Control design* is formed by three layers: selecting a set of technical and social controls, determining the objectives of controls and defining the managerial intention of controls.
CONTROL SYSTEM	Organizations' *control systems* consist of a set of different forms of control that are in systemic interaction with each other. Many studies focus only on certain types of controls, such as accounting controls.
INTERNAL CONTROL	Recent literature has differentiated the view of *internal control* as a limited view and a more comprehensive view (see, e.g., Pfister 2009, 17). **The limited view** links internal control closely to the accounting records and views internal controls as the "detailed, procedural checks and balances" (Simons 1995, 84). With the more recent, **broader definitions**, internal control has significantly expanded its domains into general management control and corporate governance (Arwinge 2010, 109), placing more emphasis on a holistic approach to internal control, emphasizing operational effectiveness and efficiency and compliance with laws, regulation, and internal policies. Thus, today internal control forms an integral part of organizational governance.
	This study defines internal control with the comprehensive view, as chapter 2.2.2 explained. It is recognized that the concept of internal control overlaps with the concept of management control, and many organizational aspects can be classified into both of these control systems. However, it is also recognized the differences between these concepts, as chapter 2.3 explained.
INTERNAL CONTROL COMPONENT	The term *internal control component* is used to describe the five elements of internal control system: control environment, risk assessment, control activities, information and communication, and monitoring activities (COSO framework of 2013)
INTERNAL CONTROL SYSTEM	*Internal control system* consists of a set of technical and social controls. It includes all of the internal control components.
MANAGEMENT CONTROL	*Management control* focuses on execution and involves addressing general questions, such as "are our employees likely to behave appropriately?". Managers addressing management control issues primarily have an internal focus; they reflect on how they can influence employee behavior in desired ways (Merchant & Van der Stede 2016, 9).

MANAGEMENT CONTROL SYSTEMS	The optimal implementation of *management control systems* (MCS) can allow managers to influence employee behavior in desirable ways that will increase the probability of the organization achieving its objectives (Merchant and Van der Stede, 2007). MCSes constitute both social and technical controls.
RESULTS CONTROLS, ACTION CONTROLS, PERSONNEL CONTROLS AND CULTURAL CONTROLS	Merchant and Van der Stede (2016) distinguish four categories of control: *action controls, results controls, personnel controls and cultural controls*. Action, personnel and cultural controls define for individuals and groups what is are desirable and undesirable actions for the organization. Results controls are based on monitoring the actions taken. Results controls do not determine the actions employees should take but focus their attention on the results to be achieved and, hence, motivate them to take appropriate actions they believe will generate the desired results. In this study results and action controls as classified as technical controls. By contrast, informal or softer (personnel and cultural) controls do not usually have predefined forms and may occur spontaneously. Personnel controls seek to increase the likelihood of employees' self-monitoring, whereas cultural controls are used to encourage mutual monitoring. An organization's culture is based on shared traditions, norms, beliefs, values, ideologies, attitudes, and ways of behaving; thus, it creates a powerful group pressure on individuals who do not act compliantly. (Merchant & Van der Stede 2007). This study classifies personnel and cultural controls as social controls.
SOCIAL CONTROLS	*Social controls* represent the manageable aspect of organizational culture (Malmi & Brown 2008, Merchant & Van der Stede 2007) and include all the "efforts to persuade people to adapt to certain values, norms and ideas about what is good, important, praiseworthy, etc. in terms of work and organizational life" (Alvesson & Kärreman 2004, 426). Social controls appeal to the emotional, nonrational, affective elements within employees (Ray 1986, 288) and consist of values, beliefs, norms (Alvesson & Kärreman 2004; Simons 1995) and symbols (Malmi & Brown 2008; Schein 1992). Social controls consist of the personnel and cultural controls, as defined by Merchant and Van der Stede (2016).
STRATEGIC MANAGEMENT CONTROL	*Strategic management control* involves managers addressing questions such as "is our strategy still valid, and if not, how it should be changed?". Strategic management control deals with issues external to the organization (they examine an industry and their organization's place in it) (Merchant & Van der Stede 2016, 9).
TECHNICAL CONTROL	*Technical controls* are based on procedures, policies, rules and standards that specify how tasks are to be performed and how individuals and groups are organized (Malmi & Brown 2008; Simons 1995; Tessier & Otley 2012a). Technical controls are embedded in the technology of work and govern day-to-day activities. These are the more visible, objective components of the control system and, thus, are the easiest to research.

Appendix 2: List of the interviewees

	POSITION OF THE INTERVIEWEE IN CASE COMPANY	INTERVIEWEE GROUP*	DATE OF THE INTERVIEW	LENGTH OF THE INTERVIEW / MIN
1	SOX Program Manager, Head of Group Internal Controls I	1	26.10.2009	120
2	Head of Accounting and Reporting Development	2	16.12.2009	80
3	External Auditor	1	2.2.2010	63
4	Process Development Manager, Group Internal Controls	1	4.2.2010	70
5	Internal control Manager, Sales and Marketing, / SOX Coordinator for Revenue cycle (Previously External auditor)	1	17.2.2010	76
6	SOX Program Manager, Head of Group Internal Controls I	1	15.3.2010	100
7	SOX Project Manager, Internal Controls Manager for Human Resources	1	18.3.2010	60
8	Director, SOX and Internal Controls, Sales and Marketing	1	19.3.2010	63
9	Director, Treasury Finance and Control	2	19.3.2010	77
10	SOX Coordinator for Accounting and Reporting cycle	1	23.3.2010	83
11	Senior Development Manager / SOX Coordinator for IT	1	25.3.2010	65
12	Head of Group Internal Controls and Internal Audit II[34]	1	26.5.2010	56
13	Accounting Process Owner, SAP Authorizations	3	19.8.2010	74
14	Head of Internal Audit I	1	24.8.2010	87

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[34]   The Internal Audit and Internal Control teams were merged in 2010, after which the roles for Head of Internal Audit and Head of Internal Control were combined

Appendix 2: List of the interviewees [continued]

	POSITION OF THE INTERVIEWEE IN CASE COMPANY	INTERVIEWEE GROUP*	DATE OF THE INTERVIEW	LENGTH OF THE INTERVIEW / MIN
15	Partner, External Auditor	1	3.9.2010	44
16	Business Case Controller	3	9.9.2010	59
17	Manager Internal Controls, Manufacturing and Logistics, SOX Coordinator for Make cycle	1	23.9.2010	67
18	Subcontracting Manager	2	24.9.2010	85
19	Business Controller, Product Design	2	1.10.2010	60
20	Coordinator, Indirect Sourcing	3	13.10.2010	68
21	Manager, Purchasing Process Development and Strategy, Indirect Sourcing	2	14.10.2010	67
22	Business Controller, R&D	3	26.10.2010	78
23	Subcontracting Coordinator, Direct Sourcing	3	26.10.2010	89
24	Internal Audit Manager	1	1.12.2010	74
25	Vice President, Finance and Control, Manufacturing and Logistics (previously Head of Shared Accounting Services)	2	1.12.2010	56
26	Senior Vice President, Group Controller	2	15.12.2010	20
27	Senior Internal Controls Specialist	1	15.12.2010	62
28	Purchasing Manager, Indirect Sourcing	2	19.1.2011	56
29	Transactional Hardware Buyer, Indirect Sourcing Europe	3	16.2.2011	50
30	Vice President, Head of Indirect Sourcing	2	21.6.2011	35
31	Senior Internal Auditor	1	16.8.2011	38
32	Internal Control Specialist, Shared Accounting Services	1	16.8.2011	56
33	Senior Internal Auditor	1	18.8.2011	32

Appendix 2: List of the interviewees [continued]

	POSITION OF THE INTERVIEWEE IN CASE COMPANY	INTERVIEWEE GROUP*	DATE OF THE INTERVIEW	LENGTH OF THE INTERVIEW / MIN
34	Accountant 1, Shared Accounting Services	3	19.8.2011	28
35	Director, Manufacturing and Logistics, Finance and Control	2	19.8.2011	56
36	Business Controller, Local Sales Unit	2	31.8.2011	56
37	Financial Concept Owner, IT Finance and control	3	2.9.2011	31
38	Executive Vice President, Chief Financial Officer	2	2.9.2011	27
39	Accountant 2, Shared Accounting Services	3	14.9.2011	20
40	Vice President, Finance and Control, Sales	2	19.9.2011	32
41	Senior Internal Control Specialist	1	19.9.2011	59
42	Accountant 3, Shared Accounting Services	3	21.9.2011	53
43	Purchasing Manager, Indirect Sourcing	2	22.9.2011	54
44	Sales and Credit Controller	2	27.1.2012	41
45	SOX Coordinator, Risk Management	1	21.2.2012	28
			Total lenght:	2655 (44h 15min)
			Average lenght:	59

* Interviewee groups (defined in more detail in chapter 1.4.3):

1) SOX community (N=20)

2) Managers (N=15)

3) Employees (N=10)

Appendix 3: Theme interview guide Example (SOX COMMUNITY & MANAGERS)

Interviewees received a list of theme interview topics two days before the interview. This example demonstrates the most common questions covered during the interviews, as there were variations between the interviews. Follow-up questions were presented during each interview in addition to the questions covered by the guide.

Background

What is your professional background?

How is your role related to internal controls and SOX compliance?

Internal controls and SOX compliance

How would you describe in general internal controls in Nokia?

How would you describe the SOX Program?

Based on your understanding, to which extent were the internal controls in place prior SOX and how were those documented?

How would you describe the internal control governance model in Nokia? How has it evolved during the time line *before SOX – during SOX implementation – during SOX compliance*?

What is the role of internal audit / external audit in SOX compliance?

What are the key activities performed in Nokia to ensure SOX compliance? How have these evolved during the past few years?

What are the internal control areas (e.g. processes, organizations etc) that have been developed / enhanced due to SOX compliance requirements? Where the development has been most powerful?

What would you see as concrete control enhancements as a result of SOX implementation? Examples?

How would you describe the process of identifying and resolving the internal control deficiencies/weaknesses? What is the role of SOX in this process?

What has happened in the area of internal control after SOX implementation? E.g. What decisions have proved to be good / bad? Have we already "given up" on some of the requirements originally launched through SOX?

In your opinion, what are the most important benefits of SOX for Nokia?

In your opinion, what are the biggest barriers of SOX for Nokia?

SOX as part of daily work

When considering all internal control activities taking place in the organization, what kind of role does SOX have there?

What kind of impact SOX had on employee's daily tasks? Is there any change resistance involved?

How well do you think employees are really following the control activities described in the catalog?

How is it ensured that the controls that are not under SOX assessment scope are actually properly performed?

How well do you think it's understood within "average" employees what SOX means? Is there a need to understand SOX? Is there a possibility to *misunderstand* SOX in some cases?

How do you perceive the attitudes of employees for SOX and internal controls? DO you see any differences between units?

What are the typical control failures you come across to?

How do you think our daily practices and processes would differ if it wasn't for SOX?

Appendix 4: Theme interview guide Example (EMPLOYEE)

Interviewees received a list of theme interview topics two days before the interview. This example demonstrates the most common questions covered during the interviews, as there were variations between the interviews. Follow-up questions were presented during each interview in addition to the questions covered by the guide.

Background
What is your professional background?
How is your role related to internal controls and SOX compliance?

Internal controls in general
How would you describe the control environment and culture in your unit and generally in Nokia?
What kind of internal controls are there in your unit? How do you feel about these controls?
How are the internal controls linked to your everyday work?
How are the failures to follow the controls being detected or is there a risk that those are not detected?
What are typical control deficiencies that are detected in your unit? And what is a typical resolution / corrective action in order to solve the issue?

Attitudes and awareness
How are the control requirements trained or communicated within the organization?
In your opinion, what is the attitude of employees towards the controls in your unit and in general?
How is it ensured that employees are following the controls? How well do you think employees are following the controls?
How would you see the role of top management in SOX and internal controls? What about your manager?
Based on your understanding, how well people in Nokia understand how their daily work is related to internal control / SOX compliance?

SOX compliance
Could you describe, from your point of view, the meaning of SOX in practical terms in your unit?
What was your first reaction when SOX was introduced? How do you feel about it currently?
What changed when SOX was introduced? How do you feel about the change?
What kind of other reactions have you observed in your organization? How do you believe, in general, people feel about SOX?
How did SOX change the daily activities and responsibilities of employees?
How are people motivated (or demotivated) to perform activities targeting to achieve SOX compliance?
What would you see as concrete control enhancements as a result of SOX implementation? Examples?
In your opinion, what are the most important benefits of SOX for Nokia?
In your opinion, what are the biggest disadvantages of SOX for Nokia?

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