

The compliance of budgeting and forecasting methods with organization design

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THE COMPLIANCE OF BUDGETING AND FORECASTING METHODS WITH ORGANIZATION DESIGN

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Abstract

Simons has developed theories on Levers of Organization Design and Levers of Control. In both theories he analyzes the different factors affecting organization design. He does not give any concrete guidance towards which direction certain internal or external factors would lead in organization design, rather he points out the key factors that managers should pay attention to when confronted with this demanding task. Contingency theory, from its part, has paid attention to the importance of the context in which management control systems are used.

The theoretical aim of this study is to find compliance of budgeting and forecasting methods with organization design. Organization design is analyzed by its decision making structures and by the way the selected management control systems are used: as a diagnostic or interactive control system. The analyzed decision making structures are centralized or decentralized decision making structures. The selected management control systems for this study are traditional budgeting and rolling forecasting.

This study is made by constructive research approach and its practical contribution lies in the novelty of this study, budgeting and forecasting application. The practical aim is that the developed application would direct the customer organizations of Haahtela HR Ltd to use the management control system which is the most effective in their organizational context as well as to improve the diagnostic and/or interactive use of the selected method thus supporting better decision making.

Findings of this study suggest that there can be found certain compliances between decision making structures and management control systems and in the way they are used. Control and coordination seem to be in focus for centralized decision making and to diagnostic control systems. Traditional budgets are still mainly used as diagnostic control systems even though there are some studies on its use as an interactive control system. Decentralized decision making is about empowerment which is based on two way information flow, which is supported by interactive use of management control systems. Rolling forecasting seems to fulfill all the conditions set to interactive control systems. The theoretical contribution of this study is that it adds to Simons' theories some guidance on which management control system to use and in what way in a certain decision making structure.

The developed budgeting and forecasting application passed market testing which is a relevant part of constructive research approach. It seemed to support the centralized decision making structure of a customer organization of Haahtela HR Ltd as well as its diagnostic way to use traditional budgeting. This practical contribution also supports theoretical results of this study.

Keywords organization design, centralized and decentralized decision making structures, diagnostic and interactive control systems, management control systems, traditional budgeting, rolling forecasting

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Tiivistelmä

Simons analysoi kehittämässään teorioissaan ‘Levers of Organization Design’ ja ‘Levers of Control’ eri organisaatiodesigneihin vaikuttavia tekijöitä. Hän ei esitä teoksissaan konkreettisia ohjenuoria siitä, mihin suuntaan tietyt sisäiset tai ulkoiset tekijät organisaatiodesignissa ohjaavat, vaan mieluummin haluaa osoittaa tämän haasteellisen tehtävän edessä oleville johtajille, mihin avaintekijöihin heidän tulisi organisaatiodesignissaan kiinnittää huomiota. Kontingenssiteoria on puolestaan kiinnittänyt huomiota sen kontekstin tärkeyteen, jossa johdon ohjausjärjestelmiä käytetään.

Tämän tutkimuksen tieteellisenä tavoitteena on löytää yhtäläisyyksiä budjetointi- ja ennustemenetelmien ja organisaatiodesignin välillä. Organisaatiodesignia analysoidaan päätöksentekorakenteiden kautta sekä miten valittuja johdon ohjausjärjestelmiä käytetään: diagnostisesti tai interaktiivisesti. Analysoidut päätöksentekomallit ovat keskitetty ja hajautettu. Johdon ohjausjärjestelmistä tutkimus kattaa kiinteän vuosibudjetin ja rullaavan ennusteen.

Tämä tutkimus on tehty konstruktiivisella tutkimusotteella ja sen käytännön kontribuutio syntyy tutkimuksen osana kehitetystä budjetointi- ja ennustesovelluksesta. Tavoitteena on, että kehitetty sovellus ohjaisi Haahtela HR Oy:n asiakasorganisaatioita käyttämään sitä johdon ohjausjärjestelmää, joka parhaiten sopii heidän käyttämäänsä päätöksentekomalliin sekä parantaisi valitun johdon ohjausjärjestelmän diagnostista ja/tai interaktiivista käyttöä tukien näin tehokkaampaa päätöksentekoa.

Tämän tutkimuksen tulokset antavat viitettä siitä, että tiettyä yhdenmukaisuutta voidaan löytää eri päätöksentekomallien ja johdon ohjausjärjestelmien sekä niiden käyttötavan välillä. Kontrolli ja koordinointi näyttävät olevan sekä keskitetyn päätöksentekomallin että diagnostisen ohjausjärjestelmän keskiössä. Kiinteää vuosibudjettia on pääasiallisesti käytetty diagnostisena ohjausjärjestelmänä, vaikkakin sen käyttöä myös interaktiivisena ohjausjärjestelmänä on tutkittu. Hajautetussa päätöksentekomallissa on kyse valtaistamisesta, joka perustuu kahdensuuntaiseen informaatioon, mitä interaktiiviset ohjausjärjestelmät tukevat. Rullaava ennustaminen näyttäisi täyttävän interaktiiviselle ohjausjärjestelmälle esitetyt edellytykset. Tutkimuksen tieteellinen kontribuutio on siinä, että se täydentää Simonsin teorioita ohjeistamalla, mikä johdon ohjausjärjestelmä sopii mihinkin päätöksentekomalliin ja miten sitä tulisi siinä roolissaan käyttää.

Kehitetty budjetointi- ja ennustesovellus läpäisi konstruktiiviseen tutkimusotteeseen olennaisena kuuluvan markkinatestin. Se näytti tukevan Haahtela HR Oy:n asiakasorganisaation keskitettyä päätöksentekomallia yhtä lailla kuin sen diagnostista tapaa käyttää kiinteää vuosibudjettia. Tämä käytännön kontribuutio näyttäisi myös osaltaan tukevan tämän tutkimuksen tieteellistä kontribuutiota.

Avainsanat organisaatiodesign, keskitetty ja hajautettu päätöksentekorakenne, diagnostinen ja interaktiivinen ohjausjärjestelmä, johdon ohjausjärjestelmät, perinteinen budjetointi, rullaava ennustaminen

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The most fascinating and surprising feature of the creation of this Master's thesis was the process itself. The process of learning, the process of becoming the master of the subject selected for this study. Not only to learn more on the subject but also more on myself. There is a kind of sadness, once it is done. To separate from the one with whom I have spent several months with. But now, life that has been waiting for several months and years has its turn. This journey had not been possible without my dear husband, Ahti. With his support and listening skills I made it to the final stage. To him I wish to present my first and deepest acknowledgements.

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1. INTRODUCTION

1.1 Objectives of study

The aim of this study is to analyze the compliance of budgeting and forecasting methods with organization design. The theoretical framework for this study lies in Simons' theories on Levers of Organization Design (2005) where it relates to decision making structures and on Levers of Control (1995) focusing on the use of diagnostic and interactive control systems. These control systems are, as typical to Management Control Systems, expected to support efficient decision making processes. Management Control Systems (MCS) analyzed more in detail in this study are traditional budgeting and rolling forecasting. Traditional budgeting has been largely criticized in recent research but simultaneously it is still widely used in organizations (Ekholm et al. 2000; Frow et al. 2010; Libby et al. 2010; Morlidge et al. 2010, 244; Neely et al. 2003; Sivabalan et al. 2009). Rolling forecasting has been proposed to be its complement (Sivabalan et al. 2009), supplement (Ekholm et al. 2000; Neely et al. 2003), or they have been seen to have totally different functions and thus should not be compared with each other (Morlidge et al. 2010).

The purpose of the management control system (MCS) is to provide information useful in decision-making, planning, and evaluation (Merchant et al. 2006). Organizational effectiveness largely depends upon the existing control system characteristics (Herath 2007). The term 'Management Control Systems' (MCS) has multiple definitions depending on the author. Anthony (1965) defined management control in terms of assuring that organizational objectives are achieved. According to his definition of MCS, strategies are taken as given and management control systems motivate, monitor and report on their implementation. Simons (1995, 5) defines MCS as follows: *"Management Control Systems are the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities"*. Simons' basic assumptions are that the analysis concern formal, not informal, routines and procedures, such as plans and budgets. Further, these systems are information-based systems, i.e. managers use them to communicate plans and goals. These systems become control systems by their use to maintain or alter patterns in organizational activities. His last assumption is that the analysis concern control systems by managers. (Simons 1995, 5) My assumptions for this study are consistent with Simons.

There have been many studies on organizational structure and management accounting (Alvesson et al. 2004; Ansari 1979; Atkinson et al. 1995; Bruns et al. 1975; Meijaard et al. 2005) but not on organization structure by its decision making structure and MCS. There have also been several

studies on the relation of accounting and management proving that accounting is not a neutral function irrelevant to management or corporate strategy (Abernethy et al. 2010; Chenhall 2003; Dent 1991; Hope et al. 2003; Malmi et al. 2008).

There have been studies focusing on the relevancy of management accounting systems in certain context (Abernethy et al. 2010; Chenhall, 2003; Malmi et al. 2008) but not on MCS in the context of organization design from the perspective of decision making processes. Contingency theory has paid attention to the importance of the context in which management control systems are used but researches have attempted to explain the effectiveness of MCS by examining designs that best suit the nature of the environment, technology, size, structure, strategy and national culture (Chenhall 2003). Herath (2007) has defined organizational structure as one of four components of management control systems.

The last ones to point out the lack of this kind of study is Tessier et al. (2012) who have analyzed Simons' theory on Levers of Control and developed a revised framework on it. In the limitations of this recent study they state:

“Finally, the revised framework does not consider organizational structure and issues of decentralization, although these elements are included in several management control systems (MCS) framework. These components have been deliberately excluded from the framework, because they were not in Simons' original framework.”

As Tessier et al. (2012) point out there has not been a study the focus of which would have been on the relation of decentralization as part of organization design and MCS even though issues of organization design as organization structure and (de)centralization has been included in several MCS framework. Further, there has not been a study where decision making structures as part of organization design would have been combined with diagnostic and interactive control systems in relation to traditional budgeting and rolling forecasting.

This study is made by using constructive research approach (Kasanen et al. 1993; Lukka 2006). The theoretical aim of this study is to find compliance between the selected Management Control Systems and Organization Design from the perspective of its decision making processes and from the way they are used, diagnostically or interactively, the idea being that a certain decision making

structure (centralized or decentralized one) and a certain use of MCS, diagnostic or interactive one, would lead to the same selection between traditional budgeting or rolling forecasting.

The practical contribution lies in the novelty of this study, budgeting and forecasting application which I have developed for Haahtela HR Ltd. Haahtela HR Ltd provides HR related IT systems to customer organizations operating in multiple business sectors. Further, they differ from their decision making structures. These customer organizations can use the developed application to direct them to use the MCS which is the most effective in their organizational context as well as to improve the diagnostic and/or interactive use of the selected method thus supporting better decision making. The objectivity is gained by developing a 'best practice' application for customer organizations' use and by providing a solution for both types of decision making structures: centralized and decentralized one.

The aim of this study is to find compliance between organization design and the two selected management control systems. Many organizations are traditionally using traditional budgeting without thinking for a second whether it still fits their present organization design. The business environment might have changed many times around the organization but the traditional budgeting has stayed. This is not to say, that traditional budgeting should no longer be used, but to function as a reminder that this aspect of business should also be analyzed.

1.2 Literary review

To start with Simons (2005), even though he does not address to decision making structures as one of the Levers of Organization Design he does address to it in several occasions, like in the descriptions of different tensions to be considered in an effective organization design. Two of the four Levers of Control, diagnostic and interactive control systems, have been included in Levers of Organization Design and in this study. The original four Levers of Control (1995) were beliefs and boundary systems, diagnostic and interactive control systems and the four Levers of Organization Design (2005) are unit structure, shared responsibilities, diagnostic and interactive control systems, or as more widely discussed: interactive networks.

Besides Tessier et al. (2012) also other researchers have further studied Simons' theories. Widener (2007) has studied various facets of strategy that drive the use of controls; to explore the relations among control systems; and to explore the costs and benefits of control systems – costs in terms of consumption of a constrained resource (i.e. management attention) and benefits (i.e. learning). She

suggests that there are multiple inter-dependent and complementary relations among the control systems, but she does not study their relation to MCS. Mundy (2010) has studied the challenges faced by senior managers when they use MCS simultaneously to direct and empower by employing Simons' (1995) Levers of Control framework. The focus of her study is in factors impacting the capacity of organizations to balance different uses of MCS, but she does not include in her analyses the effect of the organizational structure in which the MCS are used. Tuomela (2005) has studied diagnostic and interactive use of performance measurement systems and shows that they can be used in both ways. Like Widener (2007) he has also included the considerations of the cost related to the interactive use of the system in his analysis.

Bisbe et al. (2007) have, like Tessier et al. (2012), paid attention to unclear definitions. They have studied management accounting constructs and related risks of conceptual misspecification. They have used interactive use of control systems as developed by Simons (1995) to illustrate how researchers should go about specifying meaning and epistemic relationships in management accounting and control systems (MACS) by re-defining the term interactive control systems (ICS). The challenge is, if ICS as developed by Simons are used as an example, that it takes a management perspective that is practice informed, even though it is explicitly or implicitly based on managerial theories. Within the context of the Levers of Control framework, Simons' studies provide many references to the attributes and effects of ICS as observed in practice. In doing so, rather than offering a sole nominal definition that fully represents the precise meaning of the concept, Simons characterizes ICS by enumerating or pointing out an array of features that are associated with this style of use of MACS. In a similar manner Simons provides references to the attributes and effects of decision making structures as part of organization design without actually addressing to it as one of the Levers of Organization Design.

Meijaard et al. (2005) have studied the relation of organizational structure to small firm performance. For most small firms labor is the most important input, which means almost by definition that organizational structure may be very relevant to small firm performance. Atkinson et al. (1995) have studied the relation between management accounting and centralized and decentralized organizational structures. They see organizational performance as a function of organizational structure, and management accounting research must, thus, evaluate performance measures with the understanding that organizational structure affects what is, and should be, measured. They conclude their study that the apportionment of decision rights and control is not separable from the structure.

Alvesson et al. (2004) see that the idea of management accounting is founded on the belief that management control is possible, important, and necessary. Further they state that it is common to emphasize a main form of control, either in the form of a particular organizational structure or in the form of a specific mode of control dominating.

Hope and Fraser (2003, 119–120), the supporters of Beyond Budgeting movement, state that a number of organizations have seen the opportunity of abandoning budgeting not just in terms of improving processes, but also in terms of radically decentralizing their organization. Some people use the term decentralization, other use empowerment. Whichever expression is used the intent is to transfer the responsibility for strategic thinking and decision making from the center to people closer to customer. As it can be determined based on the continuous use of budget, the Beyond Budgeting movement has not gained wide support in business.

Organization design can be an important control device, as by using a particular structural type an organization can encourage certain types of contact and relationships (Abernethy et al. 1996; Alvesson et al. 2004; Emmanuel et al. 1990). Flamholtz (1983) has argued that organizational structure is a form of control which works through functional specialization, and contributes to control through “reducing the variability of behavior and, in turn, increasing its predictability”. Although many researchers consider organization design to be a contextual variable, and not part of organization controls, Malmi et al. (2008) include it as it is something managers can change, as opposed to something that is imposed on them. Further, in their study on MCS as a package Malmi et al. (2008) state the fact that MCS do not operate in isolation. While much of the MCS research considers single themes or practices that are seemingly unconnected from each other and the context in which they operate, these invariably sit within a broader control system (Chenhall 2003).

The findings of the study made by Abernethy et al. (2010) indicate that MCSs may not achieve their desired objectives unless both the operating context and leadership traits are considered prior to implementation. Their results are particularly important in understanding how the leadership characteristics of top management and the operating context of a firm influence the design and use of management control systems. Organizations devote considerable resources to both improving the technical design of MCSs and performance measurement systems as well as designing appropriate structures and incentives to accompany these systems.

Bruns et al. (1975) have concluded already in their early study on the interaction and relationships of organization structure with budgets that there must be alternative organizational control strategies in different kinds of organizations, and that prescriptions about how budgets should be used in organizational control should be written in care. Their analysis indicates clear relationships between organization structure and the use and effects of budgets. Their findings were consistent with those organizational studies which have concluded that the structure of organizations can be viewed as contingent upon environment and organization characteristics such as size, technology, and dependence (the extent to which an organization is autonomous in relationships with other organizations). Budget-related behavior is found to be contingent upon various aspects of organization structure such as centralization, autonomy, and the degree to which activities are structured. Budgets are potential means of influencing behavior. Control is the successful exercise of power to influence behavior available to an organization. Two other primary means to influence behavior are interpersonal contact, i.e. leadership, and organizational structure, i.e. the distribution of authority and work roles. This study focuses specifically on the relationship between formal properties of organizational structure and budgetary control.

Another early study on the relation between organization design and budget control has been made in 1979 by Ansari. He had paid attention already during those days to the incompatibility of budget control with the modern organization design where continuously changing business environment and horizontal level were in focus.

Ansari (1979) stated that when the organizational context changes, it is to be recognized that the changes must be reflected in the design of budgetary control systems. Ansari's (1979) study was based on closed and open systems the characteristics of which are very well in place even today. According to the study of Haka et al. (2005) budget is more useful in steady business environment and rolling forecast in more turmoil situations. Ansari's (1979) assumptions are in line with this: closed systems are characterized by certainty and static equilibrium, and open systems by growth and survival, achieving a dynamic equilibrium. Ansari's (1979) conclusions are in line with Simons: the closed systems strategy is aimed more at the autonomous behavior of a system's components whereas the open systems strategy aims to study the ways in which these components are integrated and the behavior of the resulting whole. This is also in line with the view of economics (Lazear et al. 2009) where traditional job is described as an independent one and modern job as interdependent one. Ansari (1979) further links the pyramid type of organization structure with its clear cut lines of authority and responsibility to rational closed system's model, where the

design emphasizes vertical power and authority relationships that bind an organization together. Ansari (1979) saw that open systems model, with its emphasis upon interdependence between autonomous parts, is a better model for these newer organizational forms. He stated, however, that he does not suggest that closed and open systems are either/or choices. Most social organizations and their subsystems are partially open and partially closed. What needs to be recognized is that both are appropriate under certain circumstances. This is the view still today shared by economics (Lazear et al. 2009). Opposite to this, Simons' (2005) understanding is that only one design can prevail in an organization.

Ansari (1979) combined budgetary cost control systems with closed systems, and if rolling forecasts would have been invented already during his days, he most probably would have linked it to the open, more environment-oriented system. Already then, he saw the unsuitability of budgetary systems and its management-by-exception to newer types of organizations. The fact is that management-by-exception emphasizes negative performance more often than positive. Ansari (1979) concluded that the development of new and more complex organizational forms has led to new view of organizations and management. This new view, which is best captured by an open systems model, emphasizes the vast commerce between an organization and its environment in explaining behavior. Most management and accounting information systems, however, continue to reflect a closed systems view of organizations. Thus, they currently constrain organizational development since the information provided fails to capture the impact of a system's environment on its performance.

Ansari (1979) stated the fact that budgetary control systems cannot be designed and operated in isolation of their organizational context. The design of an effective structure needs to reflect the objectives of the organization and the context in which it operates. Good management also means anticipating the circumstances that make structural development and adaption necessary. (Fincham et al. 2003, 354–355)

Contingency theory, which has been developed within organizational theory, has paid attention to the importance of the context in which management control systems are used. Researches have attempted to explain the effectiveness of MCS by examining designs that best suit the nature of the environment, technology, size, structure, strategy and national culture (Chapman 1997; Chenhall 2003). Simons (2005) states, that organization design must also take into account a business strategy, its life cycle, its competitive environment and any number of other factors that may be

relevant. Even though he does not directly refer to contingency theory, there are similarities in the listed factors, as strategy and environment. Also Chenhall (2003) points out, that management control systems will be influenced by the context within which they operate.

Contingency theory assumes that for an organization to be effective there must be an appropriate fit between structure and context. Thus structure is essentially seen as an intervening variable, which modifies the effect of contingent factors upon performance, given the context in which the organization operates. Structure is also essentially adaptive since it may need to be changed if the context is dynamic and makes demands that alter over time. (Fincham et al. 2003, 358–359)

The findings of contingency theory as well as the criticism of it have changed the way how managers go about designing organizations. The contingent thesis of there being ‘no one best way’ to manage immediately raises the question of different designs. Also Morgan (2006) shares this view. The appropriate form depends on the kind of task or environment one is dealing with. And the other way around: different types or species of organizations are needed in different types of environments. Structure is the ‘enduring set of decision rules’ in an organization, and design involves ‘the setting of appropriate structures within which decisions are made and executed’. In this sense the practical outcome of organizational analysis is to inform the selection of appropriate relations between departments and the grouping of sub-units – in short, to equip managers to make informed choices about organizational design. The task in designing organizations is to create this organizational setting in such a way as to permit the necessary decision processes to take place effectively. (Fincham et al. 2003, 367)

As this literary review shows organization design and factors affecting it has been widely studied in Accounting, Economics and Management research starting from Bruns et al. (1975) and Ansari (1979) and still continuing today. As also Bisbe et al. (2007) referred in their study, Simons seems to have merged Accounting and Management research in his theories, including contingency theory and getting some support also from the research made in the field of Economics even though in this respect there are also some opposing views.

1.3 Research method

This study is made by using constructive research approach. Its theoretical framework lies in Simons’ theories on Levers of Organization Design (2005) and on Levers of Control (1995). Of the several Levers of Organization Design the focus here is in decision making structures

(centralized/decentralized). Of four Levers of Control, the diagnostic and interactive use of the selected two management control systems, i.e. traditional budgeting and rolling forecasting is analyzed.

Constructive approach (Kasanen et al. 1993; Lukka 2006) is chosen because the aim of this study is to resolve the problem of management, whether to use traditional budgeting or rolling forecasting in their organizational context, by developing an application, which guides to the right decision making structure and which is based on the theories of Simons (2005) on Organization Design. The innovative construction developed to resolve the dilemma related to organization design and management control systems is the budgeting and forecasting application for the use of the customer organizations of Haahtela HR Ltd, which is an IT system provider in the field of human resources. In the development work the theoretical input besides Simons' theories is from the studies on the use of traditional budgeting and rolling forecasting. Also the factors of high quality IT systems are regarded as well as the importance of accurate forecasting.

The development work for the budgeting and forecasting application was initially done in spring 2011. It was further improved in the spring 2012 when the coding of it started. The application was coded by August 2012 by a software engineer who works for Haahtela HR Ltd and it has been tested in practice in August–September 2012 by a customer organization of Haahtela HR Ltd, who has already earlier implemented the other parts of the comprehensive Haahtela HR System. The interviews made in October 2012 of the representatives of the customer organization function as the market testing for the developed application.

An interventionist researcher is directly involved with something that is going on in the case and she does try to have an effect. Further, the entry is with the intention to improve, in some sense, the functioning of the host organization. (Jönsson et al. 2005) As typical to constructive research also my intervention as a researcher has been strong as I have developed this application based on earlier research and theories of Simons (1995, 2005) and with the help of this application I try to affect to the right selection of budgeting or forecasting method of customer organizations of Haahtela HR Ltd. In interventionist research the researcher is an active actor in the real-time flow of life in the field, and therefore the researcher is bound to adopt, or at least consider, the emic perspective to the issues at hand. 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. (Jönsson et al. 2005) My input as an interventionist researcher is in the practical knowledge and

work experience of financial administration, especially in budgeting and forecasting processes which I have gained earlier in business life. Further, due to my earlier work experience at Haahtela HR Ltd, I am familiar with their comprehensive HR system, which was a prerequisite for being able to develop a new function to it. This combination made it possible for me to involve myself as an interventionist researcher and provided me with the necessary skills in order to develop a well-functioning budget and forecasting application.

The practical contribution of this study is that with the help of developed application customer organizations of Haahtela HR Ltd can be guided to use the method that best fits their organization design in a very concrete way. As the developed budgeting and forecasting application as part of the comprehensive HR system of Haahtela HR Ltd is directed to current and future customers operating in multiple business fields this analysis is not a business field-specific and thus, does not include any specific business field analysis.

The theoretical contribution of this study is to find compliance between these selected management control systems and the organization design from the perspective of its decision making processes and in the way it is used, diagnostically or interactively, the idea being that a certain decision making structure (centralized or decentralized one) and a certain use of MCS, diagnostic or interactive one, would lead to the same selection between traditional budgeting or rolling forecasting.

1.4 Limitations

Simons' (1995, 2005) approach to organization design is that of senior management. Tessier et al. (2012) see this as a limitation to Simons' theories. For example, while the framework explicitly takes the point of view of managers and their attempt to manage their control package, it would be worthwhile to consider the employees' contribution to the design of the framework. This would answer a criticism formulated for Simons' framework which is that employees are considered to be passive actors (Gray 1990). As this study is dealing with management control systems, the approach of it is also that of senior management which is in line with Simons. In the application development work I have, however, considered from the practical point of view the convenience of the use of the application also from market-face managers' view point. This is visible in modification functions of the budget table.

Frow et al. (2005) have studied the informal decision making besides the formal one. Formal decision making is how it is shown in the organization chart, but in reality, decisions can be made informally, like in an invisible sub-culture. Aghion et al. (1997) have studied formal versus real authority via asymmetric information. A principal who has formal authority over a decision can always reverse her subordinate's decision but will refrain from doing so if the subordinate is much better informed. As with the aspects of control this study is based on the assumption that decisions are made formally, according to organization design and how they are seen in the organization chart. Whether this is really the case is not relevant here but could be an interesting theme for further studies.

The theories of Simons (2005, 17–18) are about positions, not about individuals at those positions. Pay for performance is about positions and individuals. Each individual is motivated in a unique manner, which is reflected in their performance measurement even though measurements are mainly based on rights and accountabilities of a position. Again, in line with Simons, this study is also about positions. Performance measurement and pay for performance is not included in this study even though Simons discusses those in Levers of Organization Design in context with diagnostic control systems and interactive networks. There is also a quite recent study on the significance of performance measurement system in organization design (Lee et al. 2011). On the other hand, Nagar (2002) has studied two key organizational design choices of top management: how much authority to delegate to lower-level managers, and how to design incentive compensation to ensure that these managers do not misuse their discretion, as theoretical accounting literature emphasizes that top management makes these two choices jointly (Baiman et al. 1995; Bushman et al. 2000) even though there is little empirical evidence of this assertion. Based on her study, Nagar (2002) finds no evidence that the extent of incentive compensation plays a significant role in explaining the extent of delegation. Inconsistent with Principal-Agent theory, (which argues that incentive compensation is a major cost of delegation), incentive pay does not affect the firm's delegation choice.

The delegation of decision making is analyzed here in the operating context. This context is also supported by the study made by Abernethy et al. (2010). They assessed how the planning and control system (PCS) was used by leaders for communicating to agents within the firm, the extent to which a leader delegates specific managerial decisions (e.g. decisions relating to human resources; marketing, internal process, etc.) as a means of empowering subordinates; and the use of the performance measurement system (PMS) as a means of executing and ensuring accountability

for the goals of the firm. They revealed in their study that leadership characteristics did not influence the decision to delegate managerial responsibilities to subordinates within the firm. Even though organization design is a strategic issue, the effects of decision-making delegation are discussed in the operational level: is the know-how of market-face managers used or not in the organization. Also leaving out the strategy-related systems (belief and boundary systems) relates to the same issue.

1.5 Structure of study

The rest of the study is organized as follows. Section two provides an introduction to the theoretical background of this study, i.e. to Simons' theory on Levers of Organization Design including decision making structures and Simons' theory on Levers of Control covering diagnostic and interactive control systems. In section three, the selected Management Control Systems, traditional budgeting and rolling forecasting, are introduced. Also their use as diagnostic and/or interactive control systems is discussed. In fourth section the research method is introduced. This section includes also the presentation of the case company, Haahtela HR Ltd and as part of constructive study the development of construction is described. Fifth section gives empirical analysis including implementation of the theoretical framework in the construction and application's practical development work as well as the presentation of the interviewed customer organization. Also results given by the market testing, i.e. interview are discussed in this section. Section six concludes this study.

2. ORGANIZATION DESIGN

2.1 Levers of Organization Design by Simons

Simons (2005, vii) argues that organization design is the most important determinant of success for implementing strategy in large organizations. In order to understand how effective managers achieve outstanding results year after year, one must master organization design.

Organizational design is a term with various meanings and as such it is a very comprehensive term. *Organization design is the principal mechanism for legitimating authority and power through formal rights.* It is a task to group individuals and to structure their tasks, to name units, choose leaders and stipulate accountabilities. Organization design refers to the formal system of accountability that defines key positions in an organization and legitimates rights to set goals, receive information, and influence the work of others. Further, accountability is at the heart of organization design. The extent of centralization or decentralization in decision making refers to the

vertical distribution of span of accountability. When people are accountable, they are answerable for performance on some measured dimension; units of output, dollars of profit, or national security. Also, this is about positions, not about individuals at those positions. Individuals come and go, but the positions with their accountabilities stay. (Simons 2005, 17–18, 92)

Organization design is a more complex issue than one would think initially. Especially, if one wishes it to be an effective one. One needs to understand business strategy, marketing, organization behavior, information technology, accounting and leadership (Simons 2005, viii). Also best designs must take into account a business’s strategy, its life cycle, its competitive environment, and any number of other factors that may be relevant (Simons 2005, 3). Simons’ understanding on organization design is consistent with contingency theory on the idea that several internal and external factors must be considered in organization design even though Simons (1995, 2005) not once refers to contingency theory in his books.

Simons (2005, 224–225) defines four interrelated steps to be involved in organization design. First, to examine the 4Cs: customer definition, critical performance variables, creative tension and commitment to others. Second, to apply the tools at hand: resources, measures and rewards, out-of-the-box pressure and leadership. Third, to design the four levers: unit structure, diagnostic control systems, interactive networks and shared responsibilities. Fourth, to align the four spans: control, accountability, influence and support. The relations between the elements of these steps are shown in the below Figure 1.

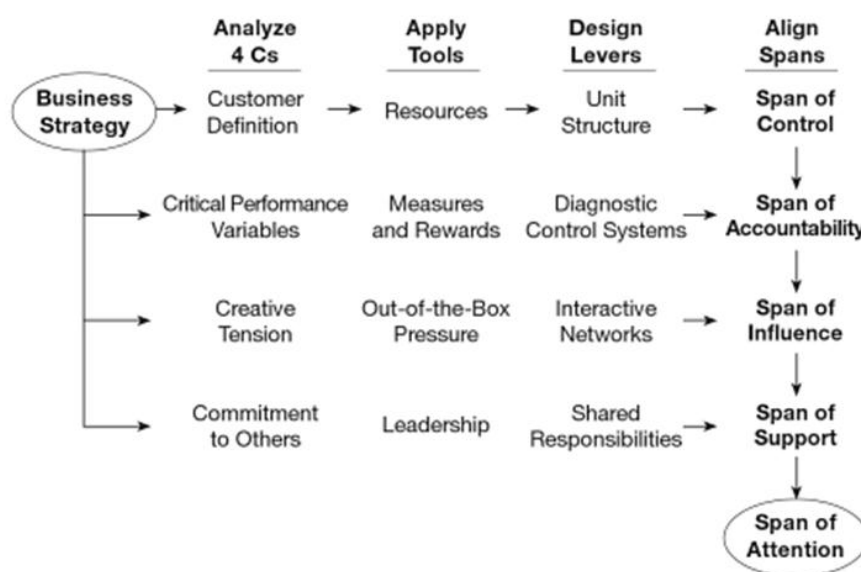


Figure 1: Relations between elements of the four steps by Simons (2005)

Even though decision making structure as such is not specifically discussed as one of the Levers of Organization Design, Simons addresses to it on several occasions both in his book on Levers of Organization Design (2005) and in his book on Levers of Control (1995) and it seems to be a consequence of strategic decisions related to the above mentioned 4 Cs.

In his book on Performance Measurement & Control Systems for Implementing Strategy (2000, 53–56) Simons briefly discusses centralized and decentralized organizations in context with Span of Attention and Organization Design. Span of attention refers to the domain of activities that are within a manager’s field of view. In centralized organizations unit managers have narrow spans of attention and in decentralized ones wide spans of attention. Three structural design levers influence span of attention: work units, span of control and span of accountability. In his newer book on Levers of Organization Design (2005, 23) Simons continues to point out that Levers of Organization Design are means by which managers influence span of attention which describes what people pay attention to, collect data on, and react to through their actions. He sees that aligning the span of attention for each position and unit throughout the organization will be the key to ensure the successful implementation of strategy. In his newer book span of attention is created by aligning Spans of Control, Accountability, Influence and Support (2005, 224).

Besides the tensions in organization design as developed by Simons (2005), three out of 4Cs: customer definition, critical performance variables and creative tension are addressed as factors of unit structure, diagnostic and interactive control systems. Tensions in organization design are discussed in Chapter 2.2. Unit structure by its relation to decision making structure is further discussed in Chapter 2.3. The two last ones are discussed more in detail in Chapter 2.4.

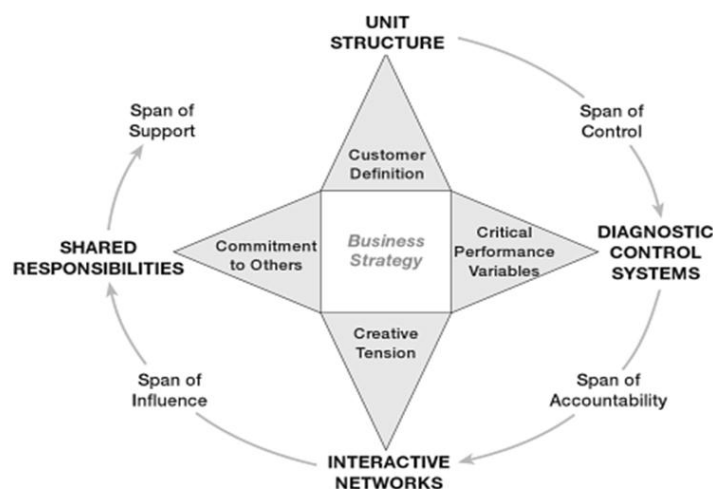


Figure 2: Levers of Organization Design by Simons (2005)

2.2 Tensions in organization design

Organization design is a creative exercise. Tensions must be balanced to create the desired effects. Managers must make choices about how to group individuals and structure their tasks. They must name units, choose leaders, and stipulate accountabilities. Although multiple alternatives may be considered, in the end only one organization design can prevail. (Simons 2005, 2) Here Simons' view differs from the one presented by economists who consider that one organization can have different organization designs for different units and processes (Lazear et al. 2009).

Importance of organization design reaches far beyond CEOs. Anyone who is responsible for achieving goals through other people must assign resources and decide how subordinates will work together. To be fully effective, all managers must understand the implications of design choices on the units they lead. (Simons 2005, 2)

Simons (2005, 7–8) presents four tensions of organization design: strategy and structure, accountability and adaptability, ladders and rings, and self-interest and mission success.

The tension between strategy and structure

On the one hand, structure follows strategy. But on the other hand, *organization design – through its defining effect on information flows – influences future strategies. The structure of an organization determines how information from the market is processed and acted upon.* The design of an organization determines *who receives information, to whom it is forwarded, and what actions are ultimately taken.* In other words, not only does strategy determine structure, but structure also determines strategy. This two-way flow must be incorporated into any successful design. (Simons 2005, 9) Diagnostic and interactive control systems have a different role in information flow. In diagnostic control system the flow is mainly from the senior management to subordinates. Interactive control system encourages the information to flow from market-face units to senior managers. The different features of these control systems are further discussed in Chapter 2.4.

The tension between accountability and adaptability for future

In past era, and also today in certain business sectors, accountability for results was reserved for top-level managers, who assigned specific tasks to workers and ensured compliance with standard operating procedures. Now, rather than specifying how subordinates should do their jobs and monitor compliance, managers at all levels place much more emphasis *on accountability for results – leaving the actual decisions about how to achieve these results to the initiative of the workers*

involved. A tension inevitably exists between accountability for today's goals and adaptability for the future: on the one hand, managers must achieve short-term results; on the other hand, they must also ensure that the organization retains the ability to innovate and adapt. Both objectives must be incorporated into effective designs. (Simons 2005, 9–10)

The tension between ladders and rings

Ladders are about hierarchical organization structure, subordinate positions in the ladder of accountability are very visible in traditional organization charts. Rings are about horizontal networks needed to coordinate information, decisions and workflows. The difficulty is to coordinate activities when employees do not control all the information and resources they need to get the job done. Technology has greatly enhanced the ability of managers to create such horizontal networks. IT applications allow companies to easily disseminate information to employees, *and for employees to pull information from new tools and databases to help them organize their work. To fully leverage these capabilities, new and emerging techniques must be part of our designs.* (Simons 2005, 11) Simons points out the importance of the IT systems as part of organization design. The construction of this study is a new application which enables and supports the selected organization design when it comes to decision making processes and improves the diagnostic or interactive use of selected control system.

The tension between self-interest and mission success

Because organizations are groups of people, no theory of organization can be complete unless it addresses head-on its embedded assumptions about human behavior. Can we assume that people will use their information and power to advance the organization's best interests? Or will they choose to maximize their own well-being? (Simons 2005, 11) As already mentioned in the Limitations (Chapter 1.4) this study does not cover issues raised by Principal-Agent theory, like pay for performance but takes it as granted that employees of which ever design in question are properly motivated to act in compliance with corporate interests.

2.3 Decision making structures

One way to think where to centralize or decentralize the decision making in an organization, is related to primary customer definition and, consequently to unit structure. Unit structure, as one of the Levers of Organization Design, is the overall architecture of the organization, which defines unit groupings and the resources that each unit controls. Simons divides units in two types: market-facing units and operating-core units. *Market-facing units* are clusters of the firm's resources

designed to respond directly to the preferences and desires of the primary customer group. *Operating-core units* are the centralized clusters of resources that provide shared products and services to market-facing units. *Market-facing units play a critical role in absorbing information from markets and delivering goods and services.* Because of this critical interface, market-facing units *need to gather market data about customers, competitors, opportunities, and threats and to deploy that information quickly.* Accordingly, responsiveness is the key objective for the design of market-facing units. (Simons 2005, 37–38) Thus, responsiveness is the critical objective for units close to the primary customer; economic efficiency and cost control are more important for units in the operating-core (Simons 2005, 32). Consequently, it could be considered that if an organization is solely, or even mainly, functioning in customer service business, like restaurants, in order to achieve efficiency, decision making should be decentralized in the organization. If an organization is a production plant, decision making should be centralized for better coordination and effectiveness.

As a rule, responsiveness comes at the cost of efficiency. The firm must also create products and services in a way that ensures adequate economic returns. Managers of a firm must seek a competitive level of profit – a level of economic return that will satisfy shareholders and financial markets. Managers of operating-core units are responsible for standardizing work processes, applying best practices to the firm’s internal operations, and ensuring efficiencies through economies of scale and scope. On one hand, market-facing units require resources if they are to be as responsive as possible to customers. On the other hand, there is a fundamental need to concentrate resources in the operating-core to drive economic efficiency. But resources are finite: choices must be made. (Simons 2005, 38)

Organization design is the principal mechanism for legitimating authority and power through formal rights. With rights, of course, come responsibilities. The right to receive information confers the responsibility to send information to superiors; the right to set goals brings the responsibility to ensure that those goals reflect the needs of the organization; and the right to influence the decisions of others carries with it the responsibility to assist others in support of organizational purpose. (Simons 2005, 18)

“Authority should match responsibility”, the wider an individual’s responsibility, the more authority he/she should have over his/her resources needed to accomplish the desired results. The extent of centralization or decentralization in decision making refers to the vertical distribution of

accountability. As a rule, accountability widens as we move up an organization hierarchy, but the shape of this relationship may be quite different across organizations. *In a highly centralized organization, senior managers alone have the right to make tradeoffs among critical financial and nonfinancial variables which are the basis for diagnostic control systems.* If senior managers want flexibility and innovation in the work of a particular position, they must decentralize decision making and hold managers accountable for measures with a wide span of accountability. Subordinate managers can then consider tradeoffs and new initiatives in an attempt to influence the measure. If, on the other hand, senior managers desire standardization to drive efficiencies – an approach that may be appropriate for certain tasks – then they must hold subordinates accountable for measures with a narrow span of accountability. Key decisions are centralized, and few tradeoffs are allowed. (Simons 2005, 91–93)

Of four spans influencing manager's span of attention span of control and span of accountability are the key levers. *Shaping span of attention is one of the key objectives of organizational design. Span of attention is at the core of the concepts of centralization and decentralization.* A centralized organization is designed so that unit managers have narrow spans of attention. In centralized organizations, senior managers want to ensure that subordinates do not become distracted by information and events that could pull their attention away from maximizing efficiency through specialization. Units are typically grouped by functional specialty, and unit managers are accountable for narrow subsets of the income statement as defined by their cost center responsibilities. The coordination of individual functions and business activities is reserved for higher level managers. Thus, in a centralized organization, accountability for trade-offs among income statement and balance sheet accounts rests at the top of the organization, where the individual functions come together to form profit centers. Decentralized organizations, by contrast, are designed so that managers have wide spans of attention. Decentralized organizations are essential when business strategy demands quick and agile responsiveness to customers and markets. In a decentralized organizations business units are market-based, with employees of the unit interacting directly with customers and markets. Accountability for trade-offs among key income statement and balance sheet accounts is delegated low in the organization. (Simons 2000, 55–56)

In many circumstances – typically when safety, quality, and adherence to standards are important concerns – managers may *not* want to empower employees, for example managers of a nuclear power plant. Safety is too critical to tolerate mistakes. One can think of many instances when senior managers will want to ensure standardization, specialization and a focus on cost efficiencies and

safety. When the intent is to standardize, a large number of input and process measures typically are used to monitor and ensure detailed compliance with management's directives. Degrees of freedom are reduced with each additional measure. Collectively, these input and process measures allow little in terms of tradeoffs and discretion. (Simons 2005, 95–98)

Meijaard et al. (2005) share the view of Simons on the different use of (de)centralization in an organization. They define organizational structure as work division, the distribution of tasks and activities, and coordination mechanisms, which includes standardization and formalization. In broad terms, specialization and decentralization are about how specific tasks and authorities are distributed in the organization, i.e. the work division. Formalization, standardization and coordination are subsequently about controlling and optimizing organizational procedures, i.e. the coordination mechanisms.

Hart et al. (2005) define an organization to be decentralized if a decision is likely to be made by someone on the ground, that is, a local expert or specialist rather than by a coordinator. They show that, if the gains to coordination are large, it is optimal for the organization to be centralized; if the gains to coordination are moderate, it is optimal for the organization to be decentralized. They also observe that firms are becoming more decentralized over time (Rajan et al. 2006).

Michel (2007) analyzes the challenges and the role of management systems in decision making delegation. The company that wins today is the one that makes the best decisions and is able to act on them quickly. These decisions have to be aligned with the strategic intent of the company, with the developments in the markets, and support the company's ability to perform. CEOs are faced with a dual challenge. On the one hand, they need to drive decision making as far as possible out to the periphery of their organization. For this, they need to be able to rely on people who have good judgment. Good judgment means that people know which signals from the market matter, which options are available, can pick the right ones and act on them quickly, all this with substantial autonomy. On the other hand, CEOs need to ensure rigor of thought, accountability and discipline. These trends are accelerating and are posing new challenges to leadership. Because good leadership now means developing good judgment in people, helping them make sense of signals and know what it means for the strategy of the firm, to their business environment and to the firms' ability to compete. In large companies, this kind of leadership cannot only happen face to face. It must be supported by formal management systems. (Michel 2007)

Fincham et al. (2003, 368–370) approach bureaucracy or empowerment as different tasks of management: control and integration which underpin any design decision. Control refers to regulating the activities of subordinates. Control mechanisms typically include standardized operating procedures, job specifications, the monitoring of performance and the assignment of responsibilities. *But the experience of being closely supervised may demoralize people and make them surrender initiative.* On top of problems of motivation, centralized control may cause related problems of inflexibility. *Organizations remain responsive to change in part because of power being delegated to those with operational roles.* Specialists keeping abreast of innovations in their field, middle managers able to act on their operational knowledge – these strengths keep an organization adaptive. Too rigid a control structure tends to withdraw decision-making capacity from those close to the boundary with the environment. Simons (2005, 9–10) acknowledges the existence of the same tension between accountability and adaptability for future but points out that nowadays (even though there are exceptions in certain business sectors) managers place much more emphasis on accountability for results, thus leaving the actual decisions on how to achieve these results to the subordinates involved.

Also economists have studied organization design in the form of (de)centralization of decision making. Their analysis is based on the asymmetry of information and on the related transfer cost. If it is too costly to transfer the information from the market-face units or managers to the top managers then the decisions should be made at the market-face units or by market-face managers. (Lazear et al. 2009) In relation to this Jensen et al. (1995) point out also the importance of a control system that ties the individual's interest more closely to that of organization. This view is in line with Simons' approach that decisions should be made there where the relevant information and knowledge is best available and that necessary controls should be in place. Further, the results of the study made by Abernethy et al. (2004) show that information asymmetry is a significant determinant of decentralization. Higher levels of information asymmetry increase the level of decentralization even in the presence of moral hazard. This is consistent with earlier research arguing that the costs associated with decentralization are more than outweighed by the benefits (Baiman et al. 1995; Christie et al. 2003).

In the next two sub-chapters some aspects of the two decision making structures, i.e. centralized and decentralized ones, are discussed. These descriptions are based on definitions mainly presented by other authors than Simons who occasionally addresses decision making structures and does not discuss them thoroughly in the reference books of this study.

2.3.1 Centralized organization design

Max Weber, the father of bureaucracy, defined basic elements of it as follows: that subordinates should not overstep the bounds of his/her authority; a specific division of hierarchy, i.e. division of power involving the ranking of offices to provide clear lines of command. Bureaucracy carries out the task of maintaining a system of records upon which the direction and control of the work of others is based. The classical example of bureaucracy is the civil service, though other large white-collar organizations, like financial services firms, also have strong bureaucratic elements. Weber's trust in bureaucracy as basis for efficiency was based on technical one. He believed that the characteristics of bureaucracy would give far-reaching advantages, making the bureaucratic form of organization absolutely necessary in a modern economy. It is apparent even today, that any large-scale organization will in some measure have a bureaucratic structure. (Fincham et al. 2003, 330–331) There must be something good in bureaucracy as it still has its place in today's business life. One aspect is related to the quick changes in market environment: bureaucratic rules imply the existence of procedures for overcoming the problems of uncertainty. They thus serve to reassure in an increasingly complex and diversified world. (Fincham et al. 2003, 336)

When coordination and control play a major role in an organization's strategy, bureaucracy has its place. When decision making is centralized fewer control loss problems occur, as decision rights have not been delegated (Abernethy et al. 2010). George Ritzer has created the term 'McDonaldization' which means that the business principles pioneered by McDonald's are increasingly dominating other industries and activities. In practice, McDonald's provides its local restaurants with a very detailed manual on how to run the business. Through this kind of control and coordination even quality and similar procedures have been achieved globally. McDonaldized industries continue the same basic processes of standardization and rationalization that systems like the assembly line established. His thesis is that McDonaldization is replacing bureaucracy as the model of rationality. It represents the next stage in the rationalization process. Ritzer makes out four specific dimensions of rationalization – efficiency, calculability, predictability and control – along each of which McDonaldization takes the process to new heights. (Fincham et al. 2003, 339–340)

Chakravarthy et al. (2007) introduce a new term to replace hierarchy: that is heterarchy. Corporate, business and functional strategies are not hierarchical anymore; they are contemporaneous and interactive. Instead of a hierarchy of strategies, we should think more in terms of a heterarchy of strategies (Hedlund, 1986). In a hierarchy every strategic decision-making node is connected to at most one parent node. In a heterarchy, however, a node can be connected to any of its surrounding

nodes without needing to go through or get permission from some other node. Faced with the turbulent environment that confronts a typical firm today, we should thus view corporate, business and functional strategies not as a top-down hierarchy with very separate roles and responsibilities but as an interdependent network or heterarchy with the fundamental challenge, for all levels of strategy, being continuous renewal (Chakravarthy 1996).

Adler et al. (1996) make a separation of bureaucracy in two: good and bad. Organizational research presents two conflicting views of the human, or attitudinal, outcomes of bureaucracy. According to the negative view, the bureaucratic form of organization stifles creativity, fosters dissatisfaction, and demotivates employees. According to the positive view, it provides needed guidance and clarifies responsibilities, thereby easing role stress and helping individuals be and feel more effective. In this study hierarchy is seen as good. Where it is considered as 'bad', it means, that decentralization and empowerment would be more suitable for that organization.

Bureaucracy in every day terms usually means the exact opposite of the highly rational and efficient system that Weber seemed to refer to. The popular view of bureaucracy conjures up an image of unnecessary paperwork, time-consuming procedure, strict adherence to rules, and unresponsiveness to clients. Bureaucracy has a.o.t. been criticized for its inflexibility: it has been said to be unresponsive to environmental changes and demands. (Fincham et al. 2003, 333–334)

The critique of bureaucracy can be divided in two different types. First, there is the suggestion that bureaucracy is actually an ineffective form of organization. The question of effectiveness is chiefly a managerial concern; the inability of bureaucratic organizations to achieve their goals in a flexible way or to respond to changes in their market environment. Second, there is criticism that bureaucracy has major social dysfunctions. These socially dysfunctional features have major implications for the erosion of individual freedom. (Fincham et al. 2003, 334–335)

2.3.2 Decentralized organization design

Fincham et al. (2003, 308) define empowerment as 'repackaging of elements of job enrichment enabling employees to use their skills more effectively' and often an aspect of wider restructuring and the move to flexible and less bureaucratic organizational designs. Richardson et al. (2002) see the benefits of decentralization in allowing organizations to reap benefits by taking advantage of the capabilities of lower-level employees whose contributions are often overlooked in more autocratic, centralized decision environments.

The essence of the adaptive and decentralized management model is that by giving capable and committed people the authority and capability to make fast decisions in their local markets, they will act responsibly, respond appropriately to the threats and opportunities confronting them and deliver consistent results. (Hope et al. 2003, 198)

Empowerment of others is an important choice made by senior management. The degree to which top management delegate decision rights to subordinates is an explicit choice. Delegation is quite distinct from leadership style as it represents the ‘real authority’ given to subordinates to make decisions over a range of decisions that affect the functioning of the business (e.g. HR, process, marketing, strategic). The degree of delegation varies from very little, where senior management make all of the major decisions to full delegation where subordinate managers are given the full set of decision rights (i.e. does not need to seek approval from a superior) such as sometimes associated with investment or profit centers (Bouwens et al. 2007).

Simons (1995, 162–164) emphasizes control in context of empowerment. As markets have become increasingly competitive and fast moving, managers have realized they must push decision making down to employees who are in close contact with customers, i.e. to market-face units as referred to in previous chapter when analyzing (de)centralization of operation-core units and market-face units. Empowering employees – moving decision-making authority from higher to lower levers in the organization – is a necessary condition for building responsive organizations. Most writing on empowerment fails to recognize that empowerment requires greater control. Notwithstanding the delegation of decision rights and the effective communication of core values and beliefs, opportunistic search behavior cannot be unbounded. Empowerment does not mean that organizational participants can do whatever they please. There must be guidelines that clearly state the types of behavior that are prohibited. These guidelines must come from senior managers who must define the types of behaviors that are potentially damaging to the organization and prohibit employees from undertaking these actions.

Brunsson (2006) points out the fact that decentralized organizations will discover that they are not paying enough attention to the benefits of coordination and standardization but also, that centralized organizations tend to generate complaints about insufficient consideration of local knowledge and local needs for adaptation. And organizations that have struck some sort of balance between centralization and decentralization may well face complaints from both sides.

Alonso et al. (2008) while emphasizing the natural advantage at adapting decisions to local conditions that decentralized organizations have, as the decisions are made by the managers with the best information about those conditions, point out the natural disadvantage such organizations have since the manager in charge of one decision is uncertain about the decisions made by others. This statement is in line with Simons (1995) who points out the important role of control and limited resources also in decentralized organizations. Alonso et al. (2008) further analyze that self-interested division managers may not internalize how their decisions affect other divisions. One might therefore reason naively that centralization is optimal whenever coordination is sufficiently important relative to the need for adaptation. They argue that this reasoning is flawed, and they show that decentralization can be optimal even when coordination is very important. Intuitively, when coordination becomes very important, division managers recognize their interdependence and communicate and coordinate very well under decentralization. In contrast, under centralization, an increased need for coordination strains communication, as division managers anticipate that headquarters will enforce a compromise. As a result, decentralization can be optimal even when coordination becomes very important.

Richardson et al. (2002) argue that managers and researchers alike must recognize that decentralization is a very complex phenomenon. When used in conjunction with organizational characteristics that enhance its effects, decentralization can be quite beneficial to an organization. However, these benefits may not immediately materialize and the effects of decentralization can be negative as well. Thus, simply not pursuing decentralization does not guarantee acceptable performance either, for the benefits of low decentralization are also dependent upon organizational and environmental conditions. Further, for almost all organizations, decentralization can be a positive influence on employee attitudes. This influence is most pronounced for shrinking organizations, those with a high percentage of professionals, those with low performance aspirations, and those experiencing high competition. They suggest that, before attempting to implement a decentralized organizational structure and related management practices, an organization should carefully consider its most important long- and short-term goals, its other characteristics, and how these goals and characteristics are likely to change in the future.

Dessein (2002) suggests based on his study that centralization of authority is only optimal if top management has the information which is important to the main decisions, or is able to check and verify the information provided by lower levels of the hierarchy. At first sight, this is in line with

the tendency of firms to focus on core activities, i.e. activities on which they have a profound knowledge, and to outsource other activities. Similarly, the trend of the last two decades towards more decentralization and empowerment, highlighted by the business press, may find its origin in a rapidly changing business environment which causes the knowledge of top management to become quickly obsolete.

Rajan et al. (2006) provide the most systematic statistical description of recent organizational trends, showing a strong movement toward flatter corporations in the United States between 1986 and 1999. Their findings suggest that *corporate hierarchies are becoming flatter but they find it challenging to ascribe the label “centralization” or “decentralization” to this*. On the one hand, the CEO is getting directly connected deeper down in the organization, a form of centralization. Increasing span of control suggests he is more directly involved in decision-making across a greater number of organizational units. On the other hand, decision-making authority and incentives are also being pushed further down, a form of decentralization. A possible explanation could be an increase in the competitiveness of the external environment, forcing the need for a more streamlined organization. Deregulation and increased trade has enhanced product market competition over the last few decades. Not only has the required speed of response for firms increased, it has put a premium on employee competence and creativity. The tall hierarchies of the past may no longer be as effective. One reason may simply be because decisions need to be taken more quickly to take advantage of fleeting opportunities in the marketplace.

It is plausible that the increases in flexibility of modern technology have reduced the importance of coordination or synergy. This would be expected to lead to greater decentralization or to creation of independent firms. (Hart et al. 2005)

2.4 Diagnostic and interactive control systems

2.4.1 Levers of Control by Simons

From the original four Levers of Control (beliefs and boundary systems, diagnostic and interactive control systems) Simons (1995) defined affecting the implementation of an organization strategy, he has included in his newer theory on Levers of Organization Design (2005) only two: diagnostic and interactive control systems. Accordingly, only these two are included in this study as control systems. The other two levers from the original four levers of control, beliefs and boundary systems, were developed more to frame the strategic domain.

Diagnostic control systems are *formal feedback systems to monitor outcomes*, the implementation of intended strategies, and *correct deviations from preset standards of performance*, e.g. through business plans and budgets, *based on critical performance variables*. (Simons 1995; 2000, 208)

Interactive control systems are used to *focus organizational attention on strategic uncertainties* and provide a lever to fine-tune and alter strategy as competitive markets change. They are used by top managers to regularly and personally involve themselves in the decision activities of subordinates. (Simons 1995; 2000, 208) Interactive controls facilitate and promote communication (Adler et al. 2011). They also promote learning (Ferreira et al. 2009).

Simons (1995) has argued that firms often have management accounting systems with similar technical characteristics – what differs is the way in which these various systems are used to achieve particular purposes by top management. Thus, the difference between diagnostic and interactive control systems is not in their technical design features. A diagnostic control system may look identical to an interactive control system. The distinction between the two is solely in the way that managers use these systems. For example, the same profit planning system can be used either diagnostically or interactively. A diagnostic control system can be made interactive by continuing and frequent top management attention and interest, influenced by strategic uncertainties. (Simons 1995, 153; 2000, 208)

As already mentioned these control systems are not technical systems as such, but different systems relating to implementation of organization's strategy (Simons 1995, 153). *Diagnostic control systems are management-by-exception systems*. No news is good news. If strategy implementation is on track, no further follow-up is required. In short, diagnostic systems are used for control. Interactive systems, in contrast, are the hot buttons of senior management. The goal of using any control system interactively is to identify emerging changes in the business – both positive and negative surprises – that may require changing the business model or strategy. When senior managers use a control system interactively, subordinates throughout the business anticipate that they will be challenged in face-to-face meetings – to offer explanations and action plans in response to emerging information and trends. (Simons 2005, 142–144)

Tessier et al. (2012) have analyzed diagnostic and interactive control systems in their study where they developed the revised framework based on Simons' theory (1995). As they see it, if interactive and diagnostic controls focus solely on the intensity of use of controls, they are not control systems

per se, rather, they are descriptions of how managers use controls. Nevertheless, this view of interactive and diagnostic controls is in line with Simons' writings (1995, 180). The revised framework does not consider diagnostic and interactive controls as control systems in their own right, but rather as a description of how control systems are used. (Tessier et al. 2012) It is clear already from the definition of MCS by Simons that he is talking about control systems. But the terms diagnostic and interactive are also used in context of 'diagnostic and interactive use of MCS'. In this study, I refer to budgeting and forecasting methods as MCS, and consequently, as diagnostic and/or interactive control systems, but also in parallel use the terms diagnostic and/or interactive *use* of budgeting and forecasting methods.

2.4.2 Diagnostic Control Systems

In the hierarchical model senior managers formulate strategies and communicate these strategies down the organization hierarchy. Management control systems then measure progress, which is monitored by senior managers who may need to take corrective action. (Simons 1995, 19)

Diagnostic control systems are the formal information systems that managers use to monitor organizational outcomes and correct deviations from preset standards of performance. Managers use diagnostic control systems to command and control through monitoring critical performance variances – the small number of variables essential to achieving intended business goals. These feedback systems, which are the backbone of traditional management control, are designed *to ensure predictable goal achievement*. (Simons 1995, 8, 59)

Diagnostic control systems allow the organization to *achieve goals without constant management oversight*. Thus, these systems allow *management-by-exception*. Although virtually all writing on management control systems refers to diagnostic control systems, managers in fact spend little time directly involved with them. Paying attention only to significant deviations is appropriate for a wide range of organizational design. *Using management-by-exception allows managers to allocate attention effectively to monitor and control plans and budgets*. From the perspective of organizational participants, diagnostic control systems allow maximum autonomy: *individuals are held accountable for results but have the freedom to choose how to accomplish desired ends*. (Simons 1995, 70)

Simons (2005, 9–10) refers to this autonomy also in the definition of tension between accountability and adaptability for future. He sees that rather than specifying how subordinates should do their

jobs and monitor compliance, managers at all levels place much more emphasis on accountability for results – leaving the actual decisions about how to achieve these results to the initiative of the workers involved.

Economists and accounting theorists sometimes assume that diagnostic control systems are used solely as performance contracts between superiors and their subordinates. This assumption ignores *the important role of diagnostic control systems in resource allocation, coordination, early warning, and business evaluation*. (Simons 1995, 74) Of these, especially *resource allocation and coordination are the features of centralized decision making* (Abernethy et al. 2010).

Diagnostic control systems coordinate and monitor the implementation of intended strategies. The targets and goals embedded in formal plans are the embodiment of management's intended strategies. Diagnostic control systems relate to strategy as a plan. These systems are essential management tools for transforming intended strategies into realized strategies because they focus attention on goal achievement for the business and the individual. At the individual level, diagnostic control systems provide the focus, resources, and goals that allow individuals to satisfy innate desires for achievement and recognition. (Simons 1995, 154–155)

Many information systems can be employed in a diagnostic control capacity, including profit plans, *budgets*, project management systems, human resource processes, and systems that measure strategic performance (Simons 2000, 208).

2.4.3 Interactive Control Systems

While diagnostic control systems do constrain innovation and opportunity-seeking to ensure predictable goal achievement needed for intended strategies, other management control systems produce exactly the opposite effects. Interactive control systems stimulate search and learning, allowing new strategies to emerge as participants throughout the organization respond to perceived opportunities and threats. (Simons 1995, 91)

Interactive control systems are formal information systems managers use to involve themselves regularly and personally in the decision activities of subordinates. Interactive control systems focus attention and force dialogue throughout the organization. They provide frameworks, or agendas, for debate, and motivate information gathering outside of routine channels. (Simons 1995, 95–96)

An interactive system is not a unique type of control system: many types of control systems can be used interactively by senior managers. They make the control system interactive by their continual personal involvement in establishing new programs and milestones, monthly reviews of progress and action plans and *regular follow-up of new market intelligence*. (Simons 1995, 96)

Interactive control systems are used to focus organizational attention on strategic uncertainties – uncertainties that could undermine the current basis of competitive advantage (Simons 1995, 9; 2000, 208). Strategic uncertainties are the uncertainties and contingencies that could threaten or invalidate the current strategy of the business. Uncertainty, in general, derives from a difference in the information required to perform a task and the amount of information possessed by the organization (Galbraith 1977, 36).

Interactive control systems are used to guide the bottom-up emergence of strategy. In the emergent model, individuals throughout the organization act on their own initiative to seize unexpected opportunities and deal with problems. (Simons 1995, 98)

Simons (2005, 141) defines four conditions necessary to make control systems interactive. They are presented in the Figure 3 below.

Information generated by the system must be a consistently important agenda for the highest levels of management.
As a result of top management's ongoing interest, data reported by the system receives frequent and regular attention from operating managers at all levels of the organization.
Data generated is discussed in face-to-face meetings of superiors, subordinates and peers.
The focus of the discussion is the challenge and debate of data, assumptions, and action plans.

Figure 3: Conditions for interactive control systems by Simons (2005)

As a conclusion of their study Abernethy et al. (2010) find a significant and positive relation between *delegation and the interactive communication use of Planning and Control Systems (PCSs)*. It is possible that the potential moral hazard problem created through delegation of decision rights is partly overcome by increasing the dialogue between superiors and subordinates in the planning and control process. This interaction increases information flows upwards and allows top

management to reinforce what is important to achieving the firm's goals. In this way superiors attempt to influence the decision choices made by subordinates. They consider PCSs to provide a complement to the delegation choice as they have the potential to address some of the information asymmetry that exists between superiors and subordinates. Even when decision making is delegated, top management is likely to have private information they need to pass on to lower-level managers. Interactive use provides a means to communicate a common mental model of the business or helps to establish common values which will guide subordinates in making congruent decisions.

Abernethy et al. (2010) argue that PCS can be used effectively to fill an 'information gap' when decision rights are delegated. In other words, the PCS are used as a complement rather than a substitute of the delegation choice. If lower-level managers have little autonomy in the operation of their unit there is less benefit in interacting with top management. The 'information gap' is less and thus top management will not need to expend resources communicating strategic priorities using the PCS for interactive communication. If the authority for decision making resides with the top management, it will be more efficient for top management to use hierarchical systems to direct behavior of subordinates. It is expected that a more formal or diagnostic use of the PCS will occur when few decision rights are delegated. Abernethy et al. (2010) find a clear connection between the diagnostic or interactive use of PCS to decision making structures: whether decision making has been delegated or not.

It is sometimes assumed that strategic planning can become a good interactive system because strategic planning should focus on strategic uncertainties and should involve senior managers. However, long-range planning systems are not used throughout the organization and are not linked to revised action plans. Therefore, strategic planning systems cannot be used as interactive systems. Strategic planning is a diagnostic control tool. New strategic initiatives are not developed through strategic planning but rather through interactive controls that guide the development of new strategic initiatives within the constraints provided by boundary systems. (Simons 1995, 114–115)

3. TRADITIONAL BUDGETING AND ROLLING FORECASTING

3.1 The roles of management control systems

Management control systems (MCS) which are studied in this thesis are traditional budgeting and rolling forecasting. As this is also the analysis on decision making structures it is important that

selected control systems *support decision making*. It is equally relevant for the study purposes that the selected MCS can also *function as diagnostic and interactive control systems*. Traditional budgeting and rolling forecasting fulfills both of these preconditions.

Malmi et al. (2008) have analyzed different definitions of MCS as part of their study on management control systems as a package. They define MCS as systems, rules, practices, values and other activities management has put in place in order to direct employee behavior in case they are complete systems as opposed to a simple rule. As a separation they mention that accounting systems, which are designed to support decision-making at any organizational level, but leave the use of those systems unmonitored, should not be called MCSs but management accounting systems. Thus, Malmi et al.'s (2008) definition for MCS is different and broader than the definition provided by Simons (1995, 5) which has a narrower focus on information-based routines only.

Conversely, Malmi et al.'s (2008) suggestion is much narrower than Chenhall's (2003) view, as accounting systems designed and/or used only for decision-support are excluded. Chenhall's (2003) view is that management control systems encompass management accounting systems but also include other controls. The definition of management control systems has evolved over the years from a focus on formal, financially quantifiable information to assist managerial decision making to include external information relating to markets, customers, competitors, non-financial information about production processes, predictive information and a broad array of decision support mechanisms and informal personal and social controls (Chenhall 2003).

Companies that take full advantages of strategic budgeting and forecasting processes will realize several benefits, a.o.t. standardized data collection and consolidation that result in a shorter budget cycle and improved forecasting accuracy, rolling forecast concepts that extend forecasting beyond year-end, reducing the dependency on manufactured deadlines that are not aligned with a constantly changing marketplace, a focus shift to value-added initiatives such as target setting, analysis and ongoing measurement, increased collaboration between finance and operations, budgeting and forecasting processes that are regarded by the organization as opportunities to create value as well as a methodology that provides a flexible approach to changing business processes, technology, organizational structure and data. (Miller et al. 2007)

Malmi et al. (2008) classify budgeting as a MCS when it links behavior to targets, i.e. to support decisions. And this has traditionally been the function of both traditional budgeting and rolling

forecasting. Morlidge et al. (2010) define also *the purpose of forecasting to support decision-making, to help create the future rather than to predict it*. With the help of forecasts it is also possible to take early actions if the forecast outcome is undesirable. *The primary purpose of budget is to set targets; it describes what we would like to happen whereas a forecast is a statement of what we think will happen*. Malmi et al. (2008) also argue that planning is done to decide ex-ante the direction one should take.

3.2 Traditional budgeting

Several studies show that regardless of the criticism of traditional budget it is still widely used. It still has several important functions in financial planning like cost control. (Ekholm et al. 2000; Frow et al. 2010; Libby et al. 2010; Morlidge et al. 2010, 244; Neely et al. 2003, 23; Sivabalan et al. 2009).

Malmi et al. (2008) have analyzed planning and cost control regarding MCS. They see “cost control” as one of the commonly used concepts open to conflicting interpretations. This may mean that an entrepreneur controls her/his own expenses, or a large organization creates a new costing system to support decision-making. Conversely, it may mean that senior managers restrict travelling in the hope of saving money or that a superior requires subordinates to report on costs relative to the budget. This reporting requirement, or accountability, may cause the subordinates to control costs by themselves. So the term cost control can refer to various types of mechanisms and activities within organizations. However, only the last two examples of cost control would classify as management controls or MCS, as managers use them to influence employee behavior and such use extends beyond providing better information for decision-making.

Sivabalan et al. (2009) have analyzed operational reasons for budgeting. They realized that budgets are used widely and the criticism is mainly targeted to performance evaluation reasons. They find that organizations regard budgets as more important for planning and control than evaluation. The two control functions are a monitoring tool for the board and control of costs.

Neely et al. (2003) have also come to similar conclusions. Traditional budget still has many useful functions what can partly explain why it is still widely used. When budget is used for planning one of its most important functions is cost control. Top management expects that set budget figures are followed and that budgeted costs are not exceeded. This is an important function of traditional budget even though also it has been criticized as constrain to future growth which is not seen to

bring any added value to the organization. Also Jensen (2003), regardless of his strong criticism towards budgets due to their role in pay for performance, points out that budgets can be used for planning and coordinating as they were intended.

As already mentioned in the beginning of this chapter budget has been widely criticized (Ekholm et al. 2000, 526–528; Hope et al. 2003, 4; Morlidge et al. 2010, xiii; Neely et al. 2003, 23; Wallander 1999, 407). The most radical ones in their criticism is Beyond Budgeting movement which considers that the only solution to succeed in today's business conditions is to entirely abandon budget. The positive consequences in abandoning budget are savings in time and costs related to preparing budget as well as increased flexibility in changing business environment. (Hope et al. 2003, xiii, 111–112)

Other often heart criticism of traditional budgeting, besides the performance related one, is its focus on one specific accounting year, usually calendar year (Drury 2008, 357; Morlidge et al. 2010, 64) as well as its inflexibility to adapt in changing business environment (Ekholm et al. 2000; Hope et al. 2003, xviii; Morlidge et al. 2010, 64; Neely et al. 2003; Wallander 1999). It is also blamed for the long time it takes to prepare it compared to the added value it provides (Jensen 2003). In the view of many accountants, traditional budgets too often are useless because they are out of date soon after they are assembled. Assuming that much of the decision making that goes into them gets done in the fourth quarter of the prior year, by the end of the following year, traditional budgets reflect thinking and data more than 12 months old. (Myers 2001) The fixed planning period is seen to emphasize short term planning on the cost of long term planning. Further, budget has been blamed for building walls between different business units and thus preventing the flexible use of various resources. (Ekholm et al. 2000; Hope et al. 2003, 4; Neely et al. 2003)

As already mentioned Sivabalan et al. (2009) concluded that the criticism of traditional budgeting is mainly targeted to performance evaluation reasons. Paying people on the basis of how their performance relates to a budget or target causes people to game the system and in doing so to destroy value in two main ways. First, both superiors and subordinates lie in the formulation of budgets and, therefore, gut the budgeting process of the critical unbiased information that is required to coordinate the activities of disparate parts of an organization. Second, they game the realization of the budgets or targets and in doing so destroy value for their organizations. Although most managers and analysts understand that budget gaming is widespread, few understand the huge costs it imposes on organizations and how to lower them. (Jensen 2003)

Hope et al. (1997), who are the strong supporters of the Beyond Budgeting Movement, and who advocate the demise of budgetary control systems on the basis that such systems are a barrier to the changes required to compete in the new 'information age'. They argue that the new management techniques, which have been developed in response to the changing environment, cannot be successfully implemented when management behavior is "snapped back" into its old shape by the invisible power of the budget. When business environment is continuously changing and adaptability is the key issue for a company to survive then budget may not be the right method. Simons (1995), on the contrary, sees that the solution is not to abandon traditional management control systems, like budget, but rather to use them as part of a more extensive control package, where they may be deployed diagnostically, in association with other forms of control to "ensure that important goals are being achieved efficiently and effectively".

3.3 Traditional budget as diagnostic or interactive control system

With a few exceptions, the vast majority of research in management accounting has implicitly or explicitly assumed that budgets serve as a diagnostic control system (Burchell et al. 1980) and, that budgets are the most widely used form of diagnostic controls (Horngren et al. 1997). Three features distinguish diagnostic control systems: the ability to measure the outputs of process, the existence of predetermined standards against which actual results can be compared and the ability to correct deviations from standards. (Simons 1995, 59) Traditional budget fulfills these features set to a diagnostic control system. It measures the output in defined unit and deviation reports compares budget figures to the actual results.

Although virtually all writing on management control systems refers to diagnostic control systems (Simons 1995, 70), budgets can also be used as an interactive control system (Burchell et al. 1980). A defining feature of interactive use of budgets is the continual exchange between top management and lower levels of management, as well as interactions within various levels of management but across functions. This interaction involves not only participation between subordinates and superiors in the budget setting process, but also an ongoing dialogue between organizational members as to why budget variances occur, how the system or behaviors can be adapted and even whether any action should be taken in response to these variances. In this setting, the budgeting system becomes a "database" which facilitates organizational learning. Interactive use occurs when top management "uses the planning and control procedures to actively monitor and intervene in ongoing decision activities of subordinates. Since this intervention provides an opportunity for top

management to debate and challenge underlying data, assumptions and action plans, interactive management controls demand regular attention from operating subordinates at all levels of the company" (Simons 1990). (Abernethy et al. 1999)

As Simons (1991) shows, interactive use of budgeting provides a vehicle for the top management to reveal their values and preferences to organization members. It enables the interchange of information concerning the opportunities, threats, strengths and weaknesses that exist as the organization re-orientates itself in the market. Interactive use of budgeting provides a means of debating how to respond to changes in environmental and operating conditions. Budgets can serve as a "catalyst for debate" and thus help participants reach a compromise rather than providing the "answer". (Macintosh 1994)

Planning and control systems (PCSs) are used in most large firms (Merchant et al. 2007) to communicate a firm's goals and objectives through the firm. This is what Simons (1990) describes as diagnostic use. On the other hand, PCSs are used as a mechanism to facilitate greater informal and interpersonal communication between top management and lower-level managers and/or among the lower level managers. Simons refers to this as interactive use. The use of PCS for interactive communication encourages lower managers to be involved in the setting of targets and to provide input into the budget. It allows top management to reveal their priorities on particular targets, and it facilitates debate among the levels of management on how best to achieve targets. If the system has been designed as an interactive communication tool it is likely that it will be used for this purpose both vertically within the firm (i.e. between top management and profit center managers); horizontally within the firm (between profit center managers) and also within the individual budget units. When used as an interactive communication tool, the PCS provides the means for leaders to communicate their visions and expectations and to seek input from subordinates (Simons 1991; Abernethy et al. 1999). They will use the PCS to communicate informally their strategic priorities and expectations as to what subordinates should achieve and how best to achieve those priorities. If the system encourages vertical communication it will also encourage horizontal communication among peers as they seek to use the system for debating alternative means of achieving strategic priorities. (Abernethy et al. 2010)

3.4 Rolling forecasting

Clarke (2007) defines rolling forecast as a forecast for sales and/or costs that always extends a set number of financial periods into the future. The term 'roll' refers to the regular update that takes

place – typically monthly or quarterly: the forecast horizon is extended so that the number of periods included remains the same. Figures are entered for the new periods at the horizon and all the figures already in place from earlier forecasts are updated. Rolling forecast focuses attention beyond the annual finishing line, trees up managers’ thinking and prompts them to look at risks and opportunities further into the future. Forecasting period differs from one organization to another. Even though there is no single right length for a forecasting period, it seems very often to be 12 months. (Morlidge et al. 2010, 62–64)

Rolling forecast has been seen in some studies to replace traditional budget (Ekholm et al. 2000; Neely et al. 2003), and in some to complement it (Sivabalan et al. 2009). Montgomery (2002) sees forecast to close the gap between the overall strategic plan and the detailed operational budget. Svenska Handelsbanken’s Wallander (1999) had a very strict view on fully giving up traditional budgeting for forecasting.

The process of rolling forecasting is considered lighter and faster compared to traditional budgeting. The information provided by forecasts does not need to be as detailed as that of traditional budgets. On several occasions rolling forecasts cover only main numbers like sales, costs and margin. (Hope et al. 2003, 87; Morlidge et al. 2010, 53–54) Montgomery (2002) shares this view. The process should be designed to prompt managers to focus on where the business is going. Another important factor is that forecast are not as detailed as traditional budgets in order to provide more meaningful “buckets” of information. Minimizing the effect of monthly aberrations (compared to detailed account level) reduces the complexity and effort.

The advantage of rolling forecasting compared to traditional budgeting is that forecasts are revised just before the beginning of forecasting period and not over a year earlier. Further, forecasts are continuously revised and not set fixed once a year. This gives flexibility: an organization can revise their forecasts whenever necessary due to changes in business environment. (Drury 2008, 357; Haka et al. 2005; Lynn et al. 2004; Morlidge et al. 2010, 69–70; Neely et al. 2003) This timely closeness of forecasts increases management’s reliance on the forecasted figures which are used for operative planning in short term. (Haka et al. 2005; Hansen et al. 2003)

Even though this continuous updating of rolling forecasts are mainly seen as a positive feature compared to traditional budgeting it has also been the target of criticism. Because they involve continuous updating and forecasting, managers have both short-term and long-term goals. Having

these multiple goals might reduce goal specificity (Haka et al. 2005). Also Drury (2008, 357) sees the main disadvantage of rolling forecast that it can create uncertainty for managers because the forecast is constantly being changed.

Navarro (2005) also emphasizes the design of an organizational structure that facilitates the timely acquisition, processing, and dissemination of forecasting information as well as timely decision making. As he sees it, the facilitative organization structure determines the advantage of an organization over rivals which is visible in operational effectiveness and as a competitive advantage as well as in longer term sustainable advantage.

Also Morlidge et al. (2010, 28) point out efficiency benefits in context with improved forecasting and see further, that the real value lies in enhanced effectiveness. Better forecasting means that decisions are being better informed. Things will be done at the right time which means fewer last minute panics, fewer times when partly completed projects are abandoned. By anticipating better and responding more quickly the performance of an organization will become more predictable and less prone to shocks and surprises.

3.5 Rolling forecast as interactive control system

Interactive control systems are the information systems that managers use to involve themselves regularly and personally in the decision activities of subordinates. They are the hot buttons of senior managers – the information that they watch regularly and discuss constantly with subordinates. (Simons 2005, 141)

Five conditions are necessary for any control system to be a candidate for use as an interactive control system. First, to be used interactively, the control system must require the *forecasting of future* states based on revised current information. An understanding of changed conditions allows participants to estimate the potential effects on current plans, goals and strategies and *forces a dialogue about the underlying causes*. Second, the information contained in a control system must be *simple to understand*. Third, a control system must be used *not only by senior managers* but also by managers at multiple levels of the organization. Fourth, a control system must *trigger revised action plans*. Fifth, a control system must collect and generate information that relates to the effects of strategic uncertainties on the strategy of the business. (Simons 1995, 108–109)

Rolling forecasting fulfills these conditions set by Simons (1995) to an interactive control system. Its focus is in the future and forecasts are continuously revised based on the new information gathered on the surrounding business environment. Forecasts are advised to be prepared on a more general level than e.g. traditional budgets (Hope et al. 2003, 87; Morlidge et al. 2010, 53–54). Rolling forecasting involves both top management and market-face managers as the local knowledge of surrounding market environment is utilized for forecasts what makes the information to flow two-ways.

Caniato et al. (2011) emphasize the importance of the implementation phase of a forecasting system as well as the alignment of the forecasting process with the organization. The implementation phase needs to be carried out carefully to gain acceptance within the organization and to provide the best results. In addition, the forecasting process and organization need to be aligned to allow a two-way flow of information from the periphery to the center and vice versa to allow the integration of the two approaches. In this way, not only can forecasting accuracy be improved, but better knowledge and consensus within the organization can also be achieved. Even though Caniato et al. (2011) do not make reference to the term ‘interactive’ as an element of a properly integrated forecasting process they do link it with a two-way information flow.

4. RESEARCH METHOD

This study is made by an assignment given by Haahtela HR Ltd (Haahtela) with a purpose to develop an IT application for the use of the current and future customer organizations of Haahtela. The theoretical framework is decision making delegation and diagnostic and/or interactive control systems as developed by Simons in his theories on Levers of Organization Design and on Levers of Control as well as recent studies on the use of traditional budgeting and rolling forecasting. The target for theoretical contribution is to analyze and make conclusions on the relation between organization design and budgeting and forecasting methods. The practical contribution is to provide customer organizations of Haahtela with an IT application on budgeting and forecasting methods which will guide them to use the method which best suits their organization design and which will further improve their budgeting and forecasting processes in cost control and forecasting accuracy.

4.1 Constructive research approach

This study is made by using the constructive research approach (Kasanen et al. 1993; Lukka 2006). Kasanen et al. (1993) argue that the constructive research approach grounded in management accounting theory and leading to working managerial constructions, satisfies the requirements of

valid applied research. Thus, they propose the constructive approach as a significant option for management accounting researchers to enter the field of relevant and useful problem solving.

According to Kasanen et al. (1993), the constructive approach has a lot in common with the decision-oriented and action-oriented approaches. Both in the constructive and decision-oriented approaches, theoretical analysis, thinking, etc. play an important role leading to the creation of a new entity. But, as they note, there are also differences such as that the decision-oriented approach typically uses the method of deduction while heuristic innovations are characteristic of the constructive approach. Decision-oriented approach emphasizes theoretical modeling, but constructive approach entails an attempt to explicitly *demonstrate the practical usability of the constructed solution*. The constructive approach is close to action-oriented approach in the empirical phase of the studies in which the case method is usually applied. Both approaches presuppose a thorough understanding of organizational processes and that the *researcher adopts a role of a "change agent"*. A clear difference is, however, that action-oriented research does not aim at creating any explicit managerial constructions. In certain cases decision-oriented or action-oriented studies may, however, correspond to a constructive one, too. (Kihn et al. 2010)

The constructive approach may be characterized by dividing the research process into phases listed in the below Figure 4 (Kasanen et al. 1993). The elements of constructive study and their interrelations are also described in Figure 5.

Find a practically relevant problem which also has research potential.
Obtain a general and comprehensive understanding of the topic.
Innovate, i.e. construct a solution idea.
Demonstrate that the solution works.
Show the theoretical connections and the research contribution of the solution concept.
Examine the scope of applicability of the solution.

Figure 4: Phases of constructive research process by Kasanen et al. (1993)

The innovation phase is often heuristic by nature; stricter theoretical justification and testing of the solution typically come afterwards. The innovation phase is the core element of a successful constructive study for the simple reason that if the researcher is not able to produce any new

solution to the problem in question, then there is obviously no point in going on with the study. (Kasanen et al. 1993) Also Kihn et al. (2010) point out that constructive research is characterized by strong intervention and participation in practical development work. Through strong intervention, the researcher – jointly with members of the target organization – develops a new construction, tests its usability, and draws theoretical conclusions based on this process (Jönsson et al. 2005). The actual usefulness of a managerial construction is never proved before a practical test is passed. Therefore the primary criterion to assess the results of applied studies is their practical usefulness, which raises the issues of the relevance, simplicity and easiness of operation of those results. (Kasanen et al. 1993)

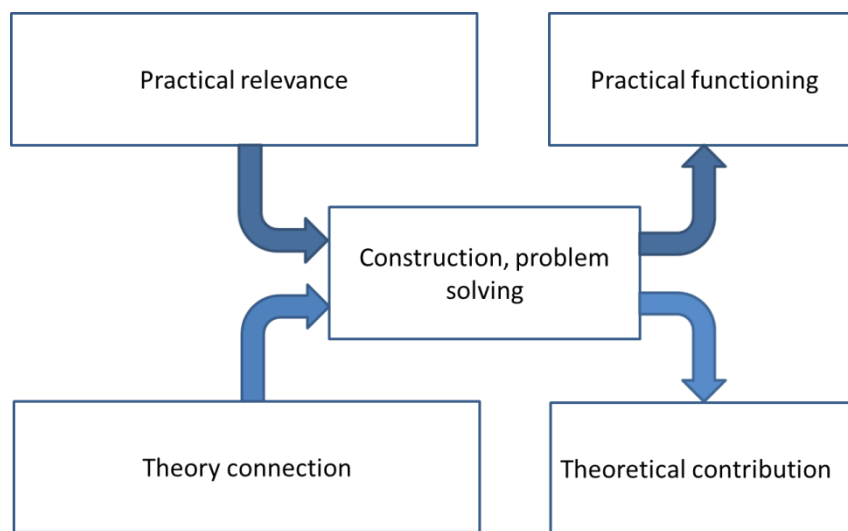


Figure 5: Elements of constructive research theory as presented by Kasanen et al. (1993)

Constructive approach is the most suitable method for this study as, besides its aim to theoretical contribution, its target is to create a novelty, a practical contribution. In this study researcher has a strong intervention by pointing out the possible inconsistencies between organization designs and budgeting and forecasting methods. For that I, as an interventionist researcher, developed the construction, i.e. a new IT application for its functionality, logic and design. With the help of this application the processes of customer organizations can be affected and improved. I was skilled for this development work due to my earlier work experience at financial administration and at Haahtela. Essential part of this study is testing the construction in practice. This is done by interviewing the representatives of the customer organization, who pilot tested the application for a couple of months, on the use and suitability of the new application for its developed purposes. The

fulfillment of the conditions of the constructive research approach by this study is explained more in detail in the next chapter as well as the actual development of the construction.

4.2 Description of research process

According to Kasanen et al. (1993), the purpose of constructive management accounting research is to solve managerial problems through the construction of innovative models, diagrams, plans, organizations, etc. The managerial problem of this study is whether to choose traditional budgeting or rolling forecasting as the method that best fits the organization design of a particular organization. The practical solution that guides the selection is the newly developed and coded budgeting and forecasting application as part of HR system provided by Haahtela. The theoretical contribution is to try to find reasoning behind the selection of the selected management control system which best suits the organization by its design as by decision making delegation and by its use diagnostically and/or interactively. This reflects to the theory of Levers of Organization Design and Levers of Control developed by Simons (1995, 2005). The Figure 6 below gives a description of the elements of this constructive study.

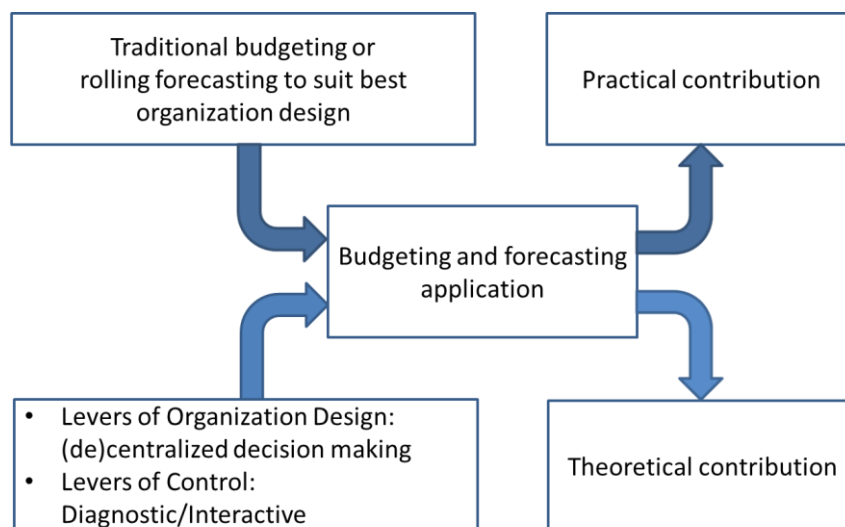


Figure 6: Elements of this constructive study

Lukka (2006, 114–121) has divided constructive research into phases which are presented below and which reminds the ones presented by Kasanen et al. (1993) (see Figure 4 in Chapter 4.1). For each phase the actual phases of this study are presented.

Find such a practically significant problem that also has potential for a theoretical contribution.

Which method suits a selected organization design best: traditional budgeting or rolling forecasting. Organization design is analyzed by its decision making structure and by the way it uses selected management control systems: as a diagnostic or interactive control system.

Find out if there are opportunities for long-term research co-operation with a case company.

Haahtela as a HR system provider to whom the application is developed and one of their customer organizations, who was willing to take the new application for pilot use and whose staff in accounting was willing to be interviewed by the researcher for market testing purposes.

Obtain an in-depth understanding of the research topic both practically and theoretically.

Simons' theories on Levers of Organization Design and Levers of Control were used as theoretical framework for this study. From Levers of Organization Design organization structure as decision making process was selected. From Levers of Control two of the original four was selected: diagnostic and interactive control systems, which were also included in the four new levers as developed in the later Levers of Organization Design.

Innovate (i.e. construct) a solution idea, and develop such a construction that solves the problem and may also make a theoretical contribution.

Construction, i.e. the novelty of this study is the new, developed budgeting and forecasting application to solve the problem as described in the first phase. Also guidelines for developing a high quality IT application were studied for developing the construction, i.e. the budgeting and forecasting application for the study, as Kasanen et al. (1993) point out the practical usefulness of the construction is determined by the issues of the relevance, simplicity and easiness of operation. The guidelines for developing a high quality IT application can be described by adjectives user-friendly, real-time, transparent and reliable.

Implement the solution and test whether it works.

The developed application was coded by a software engineer of Haahtela. It was implemented by a pilot customer organization and the representatives of this organization were interviewed after the implementation of the application for market testing purposes in order to get feed-back on the suitability and functionality of the application. The importance of training was studied and analyzed for the successful implementation purposes.

Examine the scope of the applicability of the solution and identify and analyze the theoretical contribution. These last two phases are covered in Chapter 6: ‘Discussion and Conclusions’.

The first, second, fourth and fifth phases are discussed more in detail in Chapters 4 and 5. The theoretical framework as presented in third phase is presented in Chapters 2 and 3. ‘Discussion and Conclusions’ in Chapter 6 covers the last phase on the theoretical and practical contribution.

4.3 Finding practical problem with potential to theoretical contribution

The purpose of this study is to analyze which method suits a selected organization design best: traditional budgeting or rolling forecasting. Organization design is analyzed by its decision making delegation and by the way it uses selected management control systems: as a diagnostic or interactive control system.

Organization might use e.g. traditional budgeting without further thinking whether it is really the right management control system for its organization design. Traditional budgeting is a delicate choice for one of the methods as it has been used, as its name refers, traditionally. It was developed during the days when control and coordination was in the main focus in managing business. Nowadays, empowerment of sub-ordinates seems to be more in mode mainly due to the continuous turmoil of business environment and due to the grown awareness of the market-face know-how that the sub-ordinates possess and the increasing awareness of the usefulness for the organization of that information. Also Simons seems to emphasize empowerment in context with more turmoil business environment even though he simultaneously points out the relevance of control. Rolling forecasting was quite a natural choice for the opposing management control system to traditional budgeting as there have been a lot of studies, as presented in Chapter 3 on the relation of traditional budgeting and rolling forecasting. Some studies conclude that rolling forecasting substitute and others see it as a complement to traditional budgeting. Others see them as two management control systems with totally different functions.

There has not, however, been a research which would have studied the relation of traditional budgeting and/or rolling forecasting as management control systems to organization design. From the various Levers of Organization Design developed by Simons (2005) the delegation of decision making and two of the four Levers of Control were chosen for this study as giving the guidance on which one of the selected two management control systems to use so that they would be in compliance with the selected organization design. So the question between the selection of the two

MCS is approached by two ways supported by theories developed by Simons. Support is sought equally from decision making processes and from the diagnostic and/or interactive use of MCS.

Why is it important that selected management control systems comply with the selected organization design? When in compliance, there will be fewer contradictions in the functioning of organizations. Subordinates will know what is expected from them and act accordingly: the old theory from organization theory is still valid here: “Authority should match responsibility”. This has been studied on the individual level but maybe not so much at system level. When proper control systems in place and subordinates’ authority match their responsibilities, senior management does not need to spend so much time on monitoring their subordinates and can spend more time on their other important duties like managing and developing the business, on more strategic than operational issues. The focus of this study is on how to determine which MCS suits the organization best on a very practical level as is developed by Simons on Levers of Organization Design.

With the help of the novelty, construction of the new application the customer organizations of Haahtela are guided to use the right, best fit, MCS for their organization. This will be an added value they will get by using the application provided by Haahtela.

The target for theoretical contribution is to find consistencies on the other hand between certain decision making processes ((de)centralized decision making) and budgeting and forecasting methods and on the other hand between diagnostic and interactive use of these control systems. Would it be possible to find such regularities in certain decision making processes and in diagnostic and/or interactive use that would explicitly guide to use either budgeting or forecasting method.

4.4 Presentation of case company

The study is made by the assignment by Haahtela in order to develop a budgeting and forecasting application as part of their existing comprehensive HR system. The new application must be a high quality IT application and consistent with the existing HR system. Further, it must be based on the research on organization design and management control systems.

Haahtela Corporation was founded in 1975 as an expert organization. It has three daughter companies: Haahtela-rakennuttaminen Ltd, Haahtela-kehitys Ltd and Haahtela HR Ltd. The annual revenue of the corporation is about 13 M€ and it employs about 100 employees of which about 40

are engaged with IT development work. It operates mainly in domestic markets. The focus of Haahtela HR Ltd, which was founded in 2009, is in developing HR processes and HR systems for this purpose. Haahtela HR system is a web based system that can be accessed via a web browser. It has been developed for labor-intensive sectors where personnel costs compose remarkable share of total operational costs. It is a comprehensive HR system with which personnel related routines from recruiting to creating data for salary payments can be operated. Parts of the comprehensive HR system are recruiting, personnel know-how register, administration of part time and substitute register, rota planning and salary administration. And as a novelty, budgeting and forecasting application.

Prior to my studies I used to work for Haahtela and my tasks related to the existing HR system. As part of my tasks I participated in developing the rota application. The new application is developed to take further advantages of the rota application. They support each other in their functions. Because I was already familiar with the HR system of Haahtela I qualified as a developer of this new budgeting and forecasting application.

Another reason for the selection of Haahtela for the case company of this study was that its customer organizations are functioning in multiple business fields and with different organization designs. The fact that there is no linkage in certain business field in this study is in line with Simons' theory which is also done on different levers with no link to a certain business field. Simons (2005, 17) only makes a few basic assumptions in his theory; customers are demanding, competition is intense, products and services are complex and people are widely dispersed. These are also the basic assumptions of this study, which is not about one or two industries but a study on organization design on general level, especially, as the customer organizations of Haahtela are from multiple sectors. The common feature which all customers share is that they function in labor-intensive fields, like restaurants, catering, hospitals, amusement parks etc. where the main cost item in budgets and forecasts are staff related costs. Besides multiple sectors, the customer organizations of Haahtela have also different organization designs. They cover both centralized and decentralized decision making structures. Thus, support for both decision making structures had to be implemented in the application.

The customer organization of Haahtela, the representatives of which were interviewed for market testing purposes after they pilot used the application, is presented in Chapter 5.5 'Market testing of the application'.

4.5 Practical course of developing construction

The assignment was to develop a budgeting and forecasting application as a new function of the existing, comprehensive HR system. It was considered useful as a parallel function to work shift planning function by Haahtela and by its customer organizations. A lot of useful data is generated by the HR system which could be used for budgeting and forecasting purposes in order to improve cost control and forecasting accuracy of customer organizations. This will provide added value to current and future users of Haahtela HR System.

The starting point for my development work was to find out, based on the previous research, the present need and use of traditional budgeting and rolling forecasting. As to the functionality of the application, I studied the guidelines for developing a high quality IT application. A high quality IT application today must be user-friendly, real-time, transparent and reliable. Haahtela HR System is a web based system where all users have access to the same data stored and generated by the system. The transparency and reliability of the data is thus secured due to its uniformity to all users. User rights guarantee the reliability of original budget figures and initial settings on items affecting them. Any changes in data are immediately visible for all users, which makes it operate in real time. My development work regarded also accuracy demands that are set for forecasts in today's business life. For this several algorithms were developed together with software engineer to make background calculations for forecasts.

The theoretical framework for this study is Simons' theories on Levers of Organization Design and Levers of Control. Levers of Organization Design are concerned from the decision making delegation point of view and the use of management control systems are analyzed as diagnostic and interactive control systems.

Management control systems must comply with organizations decision making structure. As these vary from one organization to another the new application must support both structures: centralized and decentralized one. Also, both diagnostic and interactive use of selected method, budgeting or forecasting, must be supported by the application. Thus, next I analyzed how the improved decision making would be supported by budgeting and forecasting functions in the application. Budget figures should be visible in work shift planning function and rolling forecasts should be made available directly from it in the form of reports.

Granlund et al. (2004, 27) see the role of IT in business life as necessary support and enabler. It offers possibilities to change processes, job descriptions and professional roles. Simultaneously, IT affects the nature of operations in an organization.

Budgeting and forecasting application is an integral part of the comprehensive HR system of Haahtela, especially its work shift planning function. The functioning and logic of this new application are consistent with the existing HR system. Further, it uses the data generated by HR system as well as its structures, like organization structure, which support the uniformity of an organization's functions, like budget accounts and periods. For the budgeting function I had to develop some new functions in the system, like a section where budgeted figures can be imported to the system. For that to be possible, it was necessary to determine the accounts first. And even before that it was necessary to make initial set-ups for costs to be included in the personnel cost and for reaching the desired accuracy level in forecasts. For these new functions I designed the functionality and appearances.

The technical functionality of this application was developed as part of my Bachelor's thesis, but the testing, essential to a constructive study, was missing as the application was only coded and implemented during this study. The application was coded by a software engineer of Haahtela and together with him the issues that arose during the coding were resolved.

The actual testing of the application was done at early-stage by researcher and by other Haahtela employees. After its functionality was considered satisfactory by own staff the application was published for pilot use to one customer organization. At this point, the representatives of this customer organization were trained by researcher and Key Account Manager of Haahtela. Simultaneously with the technical testing of the application, the customer organization evaluated application's usefulness as guidance to select the method that best complies with its organization design. After the pilot use the representatives, financial director, financial manager and process developer, of customer organization were interviewed for market testing purposes. Also, during the pilot testing period the pilot users gave feed-back on the technical functionality of the application and any bugs found during that period were corrected. Any suggestions for further improving the application were studied and if necessary, implemented.

When a consultant organization is tailor-making an application for the use of a single customer organization, the development work is usually done in close cooperation with the customer

organization in question. Part of that consultation project is analysis on customer organization's processes and jointly made decisions on targets for development work and how these processes will be directed with the help of the new application. Process analyses are mainly based on the interviews of the employees of the customer organization. This development work of the new application is, however, targeted to organizations operating in multiple sectors with multiple organization designs, which means that a generic solution is developed. Its design reflects a series of assumptions about ways companies operate in general (Davenport 1998). I, as a researcher and developer, tried to structure the application to reflect the best practices and thus, defined based on the research as described above what "best" means. Simons (2005, 33, 53) describes similar experiences on who should determine best practices when in the mid-1990s a new administration at Harvard Business School began to tell their students that they were the customers. This led to situation where professors and courses became products that students purchased. If these customers, i.e. students, were unhappy, they reasoned, the product should be changed. Very soon they returned to their old system where primary customer is not the student but rather academics in outside universities, who rely on the school to create and share knowledge.

The main assumptions and best practices considered in the development work of the budget and forecasting application are based on the recent research and scholarly. These are then integrated in the application. Also, the well-established practices of Haahtela and system functionalities are used as guidelines in the development work.

Haahtela provides its HR system to its customer organizations as Software as a Service (SaaS) which means that instead of paying license fees for the application customer organizations leases the right to use the application which is in their use via internet when and where ever. This also means that the application cannot, to wide extent, be tailor-made for the purposes of a single user organization meaning that all customers use the same standard version of it. The usability and availability of the application is the responsibility of application provider, in this case Haahtela. The application and server where it has been installed are physically located in the premises of application provider. (Granlund et al. 2004, 37)

Even though a standard system, the HR systems provided by Haahtela can be modified by the request of customer organization when it concerns terminology, layout, organization structure and reports. HR system offers standard reports but tailor-made reports are also developed in order to meet the special needs of customer organizations.

5. EMPIRICAL ANALYSIS

5.1 Simons' theory on (de)centralized decision making in development work

Simons (2005, 69, 110) emphasizes the critical nature of information technology in organization design. Broadband information networks and electronic data interchanges have fundamentally changed the range of design options available to managers. Technology has allowed companies to centralize information and thereby increase accountability, push down decision rights to empower front-line workers, increase productivity through more efficient information exchange.

According to Simons' (2005) theory on Levers of Organization Design the first step in designing an organization is to examine the 4Cs, the first one of which is 'Customer definition'. The primary customer is the person or group that the organization is designed to serve. All significant structures and systems should be configured to ensure that the firm delivers superior value to these (and only these) customers. (Simons 2005, 34) Let's take for example a restaurant. It is essential for its business and customer satisfaction, that there are adequate amount of staff at work. If customers are to wait too long to be served due to the lack of staff they do not return. If customers see a load of personnel hanging around with nothing to do they take it as a signal of business going bad maybe due to bad quality of food or customer service they are soon to find out and again, do not return. This is why duty rotas should be accurate based on the best forecasting. Or, if cost constrain would be the business strategy then customer dissatisfaction would be accepted to certain point. Work force planning has an essential role in labor-intensive sectors. Staff is the main resource and forecasts and main cost items for budgets are staff related. This is why forecasting and budgeting are combined with workforce planning in this HR system.

Recognizing the importance of the customer, like Simons has done (2005), for example, is an aspect of competitiveness that many firms feel compelled to adopt; the empowerment of employees to take decisions about customer service, and enhancing their motivation to do so, are then seen as crucial (Fincham et al. 2003, 308). This is another reason why the developed budgeting and forecasting application was connected in the HR system to rota planning: to enable a company to offer better customer service by ensuring that there are always right amount of right staff in place. And to ensure this by letting managers at customer interface to use their knowledge to determine on the necessary staffing.

Organization design – through its defining effect on information flows – influences future strategies. The structure of an organization determines how information from the market is processed and acted upon. The design of an organization determines who receives information, to whom it is forwarded, and what actions are ultimately taken. (Simons 2005, 9) This is about where decisions are being made based on the information available: centralized or decentralized decision making.

One way to think where to centralize or decentralize the decision making in an organization, is related to primary customer definition and, consequently to unit structure. Responsiveness is the critical objective for units close to the primary customer; economic efficiency and cost control are more important for units in the operating-core. (Simons 2005, 32) Unit structure is the overall architecture of the organization, which defines unit groupings and the resources that each unit controls. The basic building blocks are market-facing units and operating-core units. Market-facing units are clusters of the firm's resources designed to respond directly to the preferences and desires of the primary customer group. Operating-core units are the centralized clusters of resources that provide shared products and services to market-facing units. Market-facing units play a critical role in absorbing information from markets and delivering goods and services. Because of this critical interface, market-facing units need to gather market data about customers, competitors, opportunities, and threats and to deploy that information quickly. Accordingly, responsiveness is the key objective for the design of market-facing units. (Simons 2005, 37–38)

We could lead from above that if an organization is solely, or even mainly, functioning in customer service business, like restaurants, decision making should be decentralized in the whole organization. If an organization is a production plant, decision making should be centralized for better coordination and effectiveness. The customer organizations of Haahtela are, where rota planning is made, due to their labor-intensive nature of business, market-face units. Thus, based on Simons, they have a critical role in absorbing information from markets and they are expected to deploy that information quickly and to be responsive to the changes in market environment. To be responsive and react quickly market-face managers should be empowered to do so. Still, in some customer organizations, budget with its cost control function plays an important role in strategy implementation thus binding the hands of market-face unit managers from reacting to changed circumstances. Whatever they are expected to do as a consequence of the strategy and organization structure their reaction is visible in the rota planning: staff expenses are kept in the limits given by the budget or market demand is reflected by corresponding rota planning.

As a rule, responsiveness comes at the cost of efficiency. The firm must also create products and services in a way that ensures adequate economic returns. Managers of a firm must seek a competitive level of profit – a level of economic return that will satisfy shareholders and financial markets. Managers of operating-core units are responsible for standardizing work processes, applying best practices to the firm's internal operations, and ensuring efficiencies through economies of scale and scope. On the other hand, market-facing units require resources if they are to be as responsive as possible to customers. On the other hand, there is a fundamental need to concentrate resources in the operating-core to drive economic efficiency. But resources are finite: choices must be made. (Simons 2005, 38)

The focus of this study is in the compliance of budgeting and forecasting methods with organization design. Theoretical framework is Simons' Levers of Organization Design when it concerns centralized or decentralized decision making. In the development work the aim was to develop an application which supports both structures. Here the existing rota planning application has been utilized. *If the customer organization uses traditional budgeting for its cost control function, which is linked to control and coordination which are the features of centralized decision making* (Abernethy et al. 2010) this is supported by the application so that the budget figures for rota planning period are visible in the screen and planned rotas accumulates when new rotas have been added. If planned rotas exceed budgeted ones in euros or working hours this is shown in red for rota planner to notice it easily. Rota planner has no user rights to modify budget figures; he/she is to report on these budget deviations. This way, with the help of user rights, the reliability of control reports is guaranteed.

As markets have become increasingly competitive and fast moving, managers have realized they must push decision making down to employees who are in close contact with customers. Empowering employees – moving decision-making authority from higher to lower levers in the organization – is a necessary condition for building responsive organizations. Most writing on empowerment fails to recognize that empowerment requires greater control. (Simons 1995, 162–164)

Notwithstanding the delegation of decision rights and the effective communication of core values and beliefs, opportunistic search behavior cannot be unbounded. Empowerment does not mean that organizational participants can do whatever they please. There must be guidelines that clearly state

the types of behavior that are prohibited. These guidelines must come from senior managers who must define the types of behaviors that are potentially damaging to the organization and prohibit employees from undertaking these actions. (Simons 1995, 164) The increased interactivity makes monitoring easier and takes less effort from the management. Budgeting and forecasting application via its transparency provided by its web baseness and via its real time reports is an important tool in this eased monitoring.

Although managers do other things, the exercise of control is a dominant part of the manager's job (Mintzberg 1989; Tengblad 2001). Management control typically includes an apparatus for specifying, monitoring and evaluating individual and collective action. It focuses worker behavior, output and/or the minds of the employees. Sometimes it attempts to focus on all three. (Alvesson et al. 2004) As already pointed out, the application eases this monitoring task of management by providing ready reports directly from the application. There is no need to first import budget figures from other software in order to combine them in e.g. spreadsheet with salary expenses, nor is there a need to manually calculate staff related costs based on the rota. The application with the help of its algorithms makes all necessary calculations based on rotas and then delivers reports on deviations between budget and planned hours.

In this development work the approach is the same with Simons, i.e. senior management's. It is about management tool. With the help of the application and reports generated by it, it is easy for management to monitor costs and intervene, where necessary, in budget deviations already in very early stage, i.e. in rota planning stage. This 'management-by-exception' is characteristic to diagnostic control systems and the deviation reports provided by the application helps to execute it. Of course, in the similar way, the rota planner can print out control reports directly from the application as budget figures have been entered there. This feature improves the diagnostic and interactive use of the budget as will be discussed further in detail in the Chapter 5.2.

If the customer organization uses decentralized decision making structure, it means that rota planner uses his/her know-how on the local market environment in defining the necessary level of staffing. Thus, it is the market environment and not the budget that defines the necessary level of staffing. It is sometimes feared that empowered rota planner increases staffing. Svenska Handelsbanken considered that branch manager was best placed to determine the optimal level of staff, if for example, customer demand fell or if new IT systems resulted in fewer staff being required. This change produced a pleasant surprise: far from increasing staff numbers as was expected, the number

of staff decreased as managers took a more realistic view on future performance. (Lindsay et al. 2007) Thus empowerment did not lead to increased personnel costs but to the opposite. Based on the planned rota a forecast can be printed out as a report with a detailed breakdown of the personnel related costs.

5.2 Simons' theory on diagnostic and interactive control systems in development work

Two of the four control systems developed by Simons (1995, 2005) are used in the development work of this application. These are diagnostic and interactive control systems.

Diagnostic control system

Diagnostic control system is about accountability. Diagnostic control systems are the formal information systems that managers use to monitor organizational outcomes and correct deviations from preset standards of performance. Diagnostic control systems are used to set goals and monitor the performance of inanimate objects, business groupings and individual managers. Common diagnostic control systems include e.g. budgets and profit plans. (Simons 2005, 84) Many information systems can be employed in a diagnostic control capacity, including profit plans, budgets, project management systems, human resource processes, and systems that measure strategic performance (Simons 2000). The selected management control systems for the application are traditional budgeting and rolling forecasting. As stated by Simons (2005, 84) budget can be classified as a diagnostic control system. This diagnostic use of budgets is supported by the application so that application notifies if budgeted target figures are exceeded by salary expenses based on planned rotas. For flexibility reasons we did not want to prevent addition of new rotas after the budget limits have been exceeded but settled for a colored notification. The level of which budget limits are obeyed is to be set in training and by organizational guidelines.

Diagnostic control systems allow the organization to achieve goals without constant management oversight. Thus, these systems allow management-by-exception. Although virtually all writing on management control systems refers to diagnostic control systems, managers in fact spend little time directly involved with them. Paying attention only to significant deviations is appropriate for a wide range of organizational design. Using management-by-exception allows managers to allocate attention effectively to monitor and control plans and budgets. (Simons 1995, 70) The developed transparent and real-time application supports senior management in management-by-exception by providing them transparent and real-time reports directly from the system.

Three features distinguish diagnostic control systems (Simons 1995, 59). The realization of each feature in the application is commented below.

The ability to measure the outputs of process.

Built-in algorithms of the application turns planned shifts into salary related expenses including extra compensations for shift and/or overtime work as well as seniority allowances. This way output in terms of salary expenses (€) and working hours (h) are measured.

The existence of predetermined standards against which actual results can be compared.

The budget function of the application includes part where budgeted figures can be entered for each unit of an organization for each budgeting period. With the help of built-in algorithms the application divides the annual and monthly budget figures to the weekly period for which the rota is planned. These weekly budget figures are visible in the rota planning sheet when shifts are planned. The accumulating salary cost is compared in real time to corresponding budget figures when shifts are added or deleted from the rota. Similar deviation reports can also be printed out from the application in real-time.

The ability to correct deviations from standards.

As the possible deviations are visible already in the planning stage it is easy to modify the planned shifts so that there are no deviations from budgeted figures once the rota is completed. Traditionally budget has been classified, as explained above, as a diagnostic control system. Järvenpää et al. (2001, 167) refer to the possible use of budget as interactive control system. The starting point for this development work is that it should be possible to use traditional budget as a diagnostic and/or interactive control system. Diagnostic use of budget in the application is explained in the above paragraph. The interactive use of budgets is realized by reports. Deviation reports (budget vs. planned) can be printed out in real time for cost control purposes. These reports can be used as the basis for interactive discussions on the deviations with the manager. When rolling forecasting is in use its interactivity is similarly realized by real-time reports. In both cases top management as well as market-face managers can easily print out reports as initiators for discussions on planned personnel related costs.

As Simons (1991) shows, *interactive use of budgeting* provides a vehicle for the senior management to reveal their values and preferences to organization members. It enables the interchange of

information concerning the opportunities, threats, strengths and weaknesses that exist as the organization re-orientates itself in the market. Interactive use of budgeting provides a means of debating how to respond to changes in environmental and operating conditions. Budgets can serve as a “catalyst for debate” and thus help participants reach a compromise rather than providing the “answer” (Macintosh 1994). Budget variance information, for example, can be used as a means of learning more about the possible alternatives and their consequences. In this way budgets play a pro-active role in facilitating the effective implementation of strategic change. (Shields 1997)

Interactive control systems

Interactive control systems are formal information systems managers use to involve themselves regularly and personally in the decision activities of subordinates. Interactive control systems focus attention and force dialogue throughout the organization. They provide frameworks, or agendas, for debate, and motivate information gathering outside routine channels. Simons emphasizes control in connection of empowerment. Empowerment does not mean that subordinates can function fully without the monitoring by management as explained in Chapter 5.1. (Simons 1995, 95–96) With the help of this application it is easy for top management to monitor budgets and forecasts and act interactively on regular basis.

Interactive control systems are used to focus organizational attention on strategic uncertainties – uncertainties that could undermine the current basis of competitive advantage (Simons 1995, 9; 2000, 208). Strategic uncertainties are the uncertainties and contingencies that could threaten or invalidate the current strategy of the business (Galbraith 1977, 36).

Five conditions are necessary for any control system to be a candidate for the use as an interactive control system (Simons 1995, 108–109). Each point is provided with comments how these features are realized in the developed budgeting and forecasting application.

The control system must require the forecasting of future states based on revised current information. An understanding of changed conditions allows participants to estimate the potential effects on current plans, goals and strategies and forces a dialogue about the underlying causes.

The comparison between planned salary expenses and budgeted ones is updated each time new shifts are added into the rota. In a similar way rolling forecasts are revised each time shifts are added or deleted from the rota as to reflect the changes in surrounding markets. The closer the planning period the more accurate the planned or forecasted personnel costs will be.

The information contained in a control system must be simple to understand.

The data generated by the application is provided to the user in the form of clear, self-explanatory reports. The user does not need to try to calculate salary related expenses based on the rotas. The application is doing it for him/her with the multiple algorithms developed for this task.

The control system must be used not only by senior managers but also by managers at multiple levels of the organization.

The transparency of the application is supported in two ways. As a web based system it provides access to all relevant users via internet. Thus, the access to the system is not dependent on whether the software has been installed in your personal computer or not. The access to the system is regulated by the user rights. Managers see the data on the units and organization levels on 'need-to-know' basis. Market-face managers have read and write rights for rota planning for them to enter shifts. Senior management has read rights to the same function as they do not prepare rotas. Read rights for reports and budget figures are given to market-face and senior managers in order to guarantee the reliability of the data provided in the reports. Only main user has the write right to budget functions in order to enter budget figures in the application.

The control system must trigger revised action plans.

As explained in point 1, revised planned and forecasted salary related expenses are provided real time each time a shift has been added or deleted from the rotas. When these reports are used interactively they should lead to revised action plans as pointed out, besides Simons, by Caniato et al. (2011). The forecasting process and organization need to be aligned to allow a two-way flow of information from the periphery to the center and vice versa to allow the integration of the two approaches. In this way, not only can forecasting accuracy be improved, but better knowledge and consensus within the organization can also be achieved.

The control system must collect and generate information that relates to the effects of strategic uncertainties on the strategy of the business.

As an IT system the application collects and generates information based on rota planning. The information flow is two-way as explained in the previous point thus affecting also strategy. Strategic uncertainties are e.g. the changes in the market or competitive business environment that affect to the amount of shifts for a certain planning/forecasting period and to which market-face managers are expected to react accordingly.

As explained in detail in the above listing, the developed budgeting and forecasting application fulfills all the characteristics required from an interactive control system both when it concerns its budgeting and forecasting function.

Simons (2005) links learning with adaptability and interactive networks. Learning is also in focus with the application and its rolling forecast function. Market-facing managers are encouraged in the training to use their front-end knowledge on the market and using that information when planning workforce lists. The historical data, like the rota for the same period of the previous year can be used to get started but more important than just to copy that is to look forward and follow competitors' actions and adjust rota accordingly. The application supports learning by profiles and historical data.

Training is not about solely training the users to work with the new solution, i.e. market-facing managers in workforce planning. It is equally important to train senior managers to the new way of working and thinking and to the possibilities provided by the new application. Simons has determined the above five conditions for information systems to be interactive control systems. Interactive control systems are used by senior managers to regularly and personally involve themselves in the decision activities of subordinates (Simons 2000, 208). Based on this, market-facing managers should not be left alone with their duties, but they need continuous feed-back on how they are doing and immediate comments if something must be altered for any reason obvious to senior managers with wider access to company-wide information. Also, it would be very useful for learning purposes to gather together all peers regularly to compare and share their experiences.

The difference between diagnostic and interactive control systems is not in their technical design features. A diagnostic control system may look identical to an interactive control system as is the case in the application: budgeting function can be used both diagnostically and interactively. The distinction between the two is solely in the way that managers use these systems. A diagnostic control system can be made interactive by continuing and frequent top management attention and interest, influenced by strategic uncertainties. (Simons 1995; 2000, 208)

5.3 Traditional budgeting and rolling forecasting functions in the application

Traditional budget has been traditionally used for planning and coordination. Rolling forecasting has been seen as its supplement, complement or a method with a totally different function. Another

reason why rolling forecasting was selected as one of the MCS for this study is its important role in supporting decision making (Morlidge et al. 2010, 54). Also, traditional budgeting and rolling forecasting can be used diagnostically and/or interactively.

Even though traditional budgeting has been largely criticized in recent scholarly literature, it is still widely used (Ekholm et al. 2000, 526–528; Frow et al. 2010, 459–460; Libby et al. 2010, 67; Sivabalan et al. 2009, 867–869). Sometimes rolling forecasting has been proposed to be its supplement and sometimes to be its complement (Sivabalan et al. 2009, 867–869), but according to Morlidge et al. (2010) traditional budgeting and rolling forecasting have totally different functions and thus, should not even be put side by side for a comparison. The purpose of forecasting is to support decision-making, to help create the future rather than to predict it. Budget's primary purpose is to set targets; it describes what we would like to happen. Traditional budgeting has several functions that rolling forecasting has not, the most important of which is cost control.

For the newly developed application to meet the demands of organizations with different organization design it includes both management control systems: traditional budgeting and rolling forecasting. For some customer organizations it is important to follow strictly the cost level set by the budget and for some customers it is important to enable growth in sales and adaptability in changing business and competitive environment by providing adequate resources. The developed application supports both needs. Budgeted personnel costs direct the operations via giving limits to the amount of shifts per period. Rolling forecasting (in euros and working hours) is created based on the rota.

One reason for the criticism of the traditional budgeting is the time it takes to be prepared (Jensen 2003). For this reason the attention must be paid on the time and effort it takes to prepare annual budget and try to ease it as much as possible with the help of modern technology, like automation of operations. This leads to less time spent by the staff involved in budgeting and, consequently, less monetary expenses as budgeting costs. The same issues relate also to rolling budgeting. But as rolling budgets are continuously revised, would the amount of work be multiple compared to annual budgeting, unless forecasting is supported in an effective way by IT technology. (Granlund et al. 2004, 74–75) The developed budgeting and forecasting application employs fully the data and structures already existing in the HR system. Also all possible functions are automated. To give a few ideas on the automated functions, e.g. when preparing traditional budget for a new budget year, it is possible to use old budget figures by copying those as a basis for the new budget and

simultaneously by raising those figures by a certain percentage or monetary amount. Rolling forecasting is created simultaneously while rota plans are being prepared, thus forecasting does not cause any extra work to the rota planner responsible for forecasting. As explained above, with the help of built-in algorithms forecasts are created based on the rota and can be printed out from the application in euros and/or working hours for selected, usually 52 weeks', period.

Traditional budgeting

Sivabalan et al. (2009) see that the reason why traditional budgets are still widely used is that they are used for functions which have not been criticized. One of them is cost control function. Top management communicates the set target levels of costs to subordinates with help of budget and expects that the target levels are followed and not exceeded. Also Neely et al. (2003) regard this as an important function of traditional budget even though it has also been criticized as being constrain for future growth and it has not been seen to provide any added value to organizations.

The main reason why this application includes budget function is in its cost control function. If budgeted salary expenses must be followed then they must be easily visible and accessible for rota planner. The rota planner can see the budgeted figures while preparing rotas. This way the application supports and improves the cost control. Equally important for the rota planner is that he/she can print out budget deviation reports directly from the application without any delay which otherwise would be caused by waiting for budget data from other systems or actual personnel cost instead of seeing them already in the planning state.

The comprehensive HR system has its own section for each function, like recruiting and rota planning. Accordingly, for this new budget function section where budget figures can be entered was developed. Budget figures can be transferred from other systems or entered manually in the application. The logic is such that the annual budget figures are entered for corresponding account field and then with automated functions they can be divided evenly in months or by set percentages. For this also previous budget figures can be used as basis and then raised with a percentage or euro amount.

Before entering the actual budget figures by an account level the budget years must be created for the whole organization or for each unit separately. The logic in this function is similar to other functions in the system. First the relevant organization is selected and then the desired budget year is created.

Challenges regarding budgeting in IT technology are related to the complex, multi-levered structures of organizations. Already in middle-sized organizations administrators during budgeting processes quite a large amount of data. (Granlund et al. 2004, 74) At a minimum, all business units within the firm – whether market-facing or operating-core – should be operating with the same accounting system and chart of accounts. This consistency is necessary to ensure that managers have the tools they need to establish and monitor accountability. Without the ability to obtain detailed performance data on individual businesses and work processes, many of the design archetypes would not be feasible. (Simons 2005, 73) The organization structure already existing in the HR system supports the uniformity of actions and reporting within an organization. Thus the definitions are created on the top level from where they are affecting all sub-units unless otherwise defined. This supports the uniformity of accounting systems and thus, easiness to compare reporting between different units and benchmarking. For the chart of accounts a new section was developed where the accounts can be entered.

Another challenge is created by the constantly changing business environment and needs. For these reasons the budgeting application should be a flexible one. Organization structures changes continuously and adding new units and deleting old units should be possible to be done with easiness. Demand on flexibility affects also data storage and reporting. Budget application should be able to handle fluently budget data for different periods of time and on different accuracy levels. (Granlund et al. 2004, 75–76) Simplification and standardization was also one of the financial planning enablers resulting in budgeting and forecasting improvements identified by Miller et al. (2007). Budgeting and forecasting processes, as well as systems and data models, must be capable of supporting the rapid changes prevalent in today's business climate. They must also deliver precision while remaining flexible enough to accommodate rapid changes in organizational structures due to realignments, divestitures and acquisitions. Due to the flexible, built-in organization structure of HR system it is easy to modify organizations' structure. Minor changes, like changes in accounting numbers are copied automatically from top level organization to its sub-units.

Third challenge in practice can be the transparency of the budget. It is not enough that budget has been prepared. Budget figures must also be communicated to subordinates. It is not exceptional that subordinate who is supposed to follow budget figures does not know them. The application takes

care of this communication task by providing the part where budget figures can easily be entered, and from where they are transferred to be seen in rota planning section.

Top management must be able, when necessary, to drill down in the budget to smallest possible data units, like single work shift, account or organization unit. Simultaneously it is necessary, that not all members of an organization can see which ever budget or part of it. The technical administration of user rights makes it easy to grant or prevent access to specific parts of the budget. (Granlund et al. 2004, 76) The idea of the application, as already explained in the previous chapter on diagnostic and interactive use of control systems, is that senior management can whenever, in real time, monitor the realization of budget control in order to react on possible deviations at a very early stage. Via the application this monitoring task can be done without disturbing the subordinate's activities. Further, with user rights administration user access is granted only to those units necessary to a user as pointed out by Granlund et al. (2004, 76).

Morlidge et al. (2010, 126–128) emphasize the importance of real time measurement for us to know how well we are doing compared to the target. This important demand is realized in the application so that the accumulated salary expenses are visible side by side with the corresponding budget figure while rota is planned. This way rota planners are continuously aware where they stand in comparison to budget already in the planning stage and negative deviations can be easily corrected without delay. Deviation reports on budgets can be reported to different organizational levels for freely chosen periods in the limits of user rights. User rights are defined as per units and as per rights to read and/or write.

IT technology enables creating various versions of budgets before approving the final one (Drury 2008, 370–371). During the coding process of the budgeting function it developed to a diversified tool for building up a budget instead of being only a tool to communicate the budget figures to rota planner as it was initially designed to do. Now, with the help of this tool it is easy to little by little build up the budget and save various versions of it before transferring the final one to rota planning section for supporting the rota planner in budget control. It is to be kept in mind, however, that in this application it is about management control system. Thus, the budget figures are fixed in the system once they are final.

Rolling forecasting

The purpose of forecasting is to support decision-making, to help create the future rather than to predict it. It follows that the most important quality for a forecast is that it is actionable, which means it provides information useful for decision-making. The information needed for this is likely to be different in nature and less detailed than that required for budgeting purposes. It also needs to be available in time for decisions to be made, which makes speed in the production of forecasts important. Further, decision-making demands forecasts that are reliable (accurate enough) rather than those that are perfectly accurate. Cost effectiveness is important, but less so than other four qualities, which are timely, actionable, reliable and aligned. (Morlidge et al. 2010, 54)

Also Gilliland (2003) analyzes the accuracy and cost effectiveness of forecasts. A primary purpose of business forecasting is to generate forecasts as accurate and unbiased as we can reasonably expect them to be, and do so as efficiently as possible. While we do not have total control over the accuracy achieved, we can control over the process used and the resources we invest. There are two common sources of process inefficiency. First, confusing management's targets or wishes with an unbiased best guess of what demand is really going to be. Second, spending excessive resources in an attempt to achieve levels of accuracy, which are unreasonable to expect. We waste resources by a fundamental misunderstanding of forecasting capabilities, and by pursuing levels of accuracy that probably cannot be achieved. (Gilliland 2003) The accuracy level of forecasts generated by the application was originally designed to be satisfactory giving the nature of it being a forecast. Increased attention was, however, paid to the accuracy of rolling forecasting while being coded. Multiple algorithms were developed in order to guarantee as accurate as possible forecasts based on the planned rotas. The idea behind this development work was to include all necessary salary related expenses in the forecast as early stage as possible by calculating, besides the base salary, extra compensations for shift and/or overtime work as well as seniority allowances.

The features of rolling forecasting are real time and transparent. When Wallander in Svenska Handelsbanken decided to give up budgeting he urged that everyone must see in real time the same information. He understood that the freedom of boundaries set by bureaucracy and advance planning was fully dependent on the openness of IT systems. (Hope et al. 2003, 30)

As Morlidge et al. (2010, 89) state all forecasting is based on models. Also forecasting function in the new application utilizes existing profiles as forecasting models. 'Profiles' in this context means model rotas defined for certain periods of time, like Christmas or tourist seasons or week-ends. The

profile includes the amount of work shifts necessary to fulfill the staffing demand. It is a good basis for a forecast which can be further revised as the planning period approaches or something changes in the market or business environment for that period.

Rolling forecasting is based on the surrounding market knowledge of market-face managers (Hope et al. 2003, 119–120). Consequently, in this application the starting point for the forecasting function is that it is created by the market-face managers who are responsible for preparing rotas. Rolling forecasts are usually prepared for a certain period of time, which usually is 52 weeks. The idea is that the forecast for the end period of this time is more on a rough level with the help of profiles and as the period approaches forecasts become more accurate. Rolling forecasting is a continuous process and managers are encouraged to constantly look ahead and review future plans (Drury 2008). Also Morlidge et al. (2010, 69–70) suggest revising forecasts in parts. It is not necessary to reforecast each element, or each cycle of the forecast all the time. It makes sense to reforecast shorter term horizon more frequently than refresh the longer term horizon.

Once the current forecasting period ends a new period is prepared to the end of forecasting period (Drury 2008, 357; Haka et al. 2005; Lynn et al. 2004). A reminder of this is built in the application. Once a rota for a determined period (usually from one to three weeks) is published the application reminds the rota planner to prepare a new forecast to a similar period of time to the end of forecasting period. The new, initial forecast can be created the easiest way with the help of above described profiles or by using the previous actual rota for the same period. If this is not done immediately the application reminds on this by providing a list of empty, i.e. not forecasted, weeks. This way forecaster does not need to go through all 52 weeks in order to see where forecasts are missing. It is enough just to check these from the list. This is one of the features providing additional user friendliness in the application.

Forecasting is a core activity and it should be resourced accordingly. Further, forecasts should have owners and those maintaining it should also be its users. (Clarke 2007) In order to prepare a reliable forecast, the person who prepares it should be the one who knows the market and competitive environment the best. Usually this is the market-face manager. And if preparing forecasts is his/her duty it could be assumed that he/she has been empowered for this task. By this responsibility, he/she has been made the owner and maintainer of the forecast. This is fulfilled in the application automatically: market-face managers who prepare rotas are preparing simultaneously forecasts, if they have rolling forecasting function in their use.

Reports

In some cases some duties which traditionally have belonged to financial administration, like budget reporting and deviation analysis, have been transferred to other parts of an organization (Granlund et al. 2004, 18). The new application supports this present development. User rights allowing anybody can on demand print out real time deviation or forecast reports for a desired period. This function covers also the other matters emphasized by Morlidge et al. (2010, 126–128), like transparency and real time. It is very important to receive continuous feedback on the accuracy and reliability of forecasts in real time.

Typically, financial data needed for analysis and reporting are scattered in several operative data systems. This data transfer from one system to another is also a disadvantage pointed out by Davenport (1998). For this reason a separate data system is needed for reporting or data necessary for analysis is transferred to spreadsheet software for further analysis. This transfer process between applications is often challenged by inconsistent interfaces, e.g. securing the consistency of basic data. Also, this alternative causes more license fees to be paid to several software providers. (Granlund et al. 2004, 40, 52) With the help of the new budgeting and forecasting application besides the planned and forecasted personnel costs also budgeting figures are entered in the system. This enables the printing out of deviation reports from this one system only. This provides an important improvement in customer organizations' reporting processes.

In several occasions, the standard reports provided by software can be adequate. In general, it can be stated that when dealing more with management accounting, differences between organizations grow. (Granlund et al. 2004; 40, 52) The information needed for forecasts is likely to be different in nature and less detailed than that required for budgeting purposes (Morlidge ym. 2010, 53–54). Rolling forecasts cover the important figures only, like orders, sales, costs, profits and cash flows (Hope et al. 2003, 87). The application provides standard reports for both budgeting and forecasting. But it became obvious already in pilot period that the pilot customer organization needed automated number crushing from the system also in case of planned work shifts which could be turned into a forecast. This was more detailed than originally planned for the application. Thus, forecast reports ended up to remind budget reports in the level of accuracy. The challenges faced with this request are described in the below Figure 7.

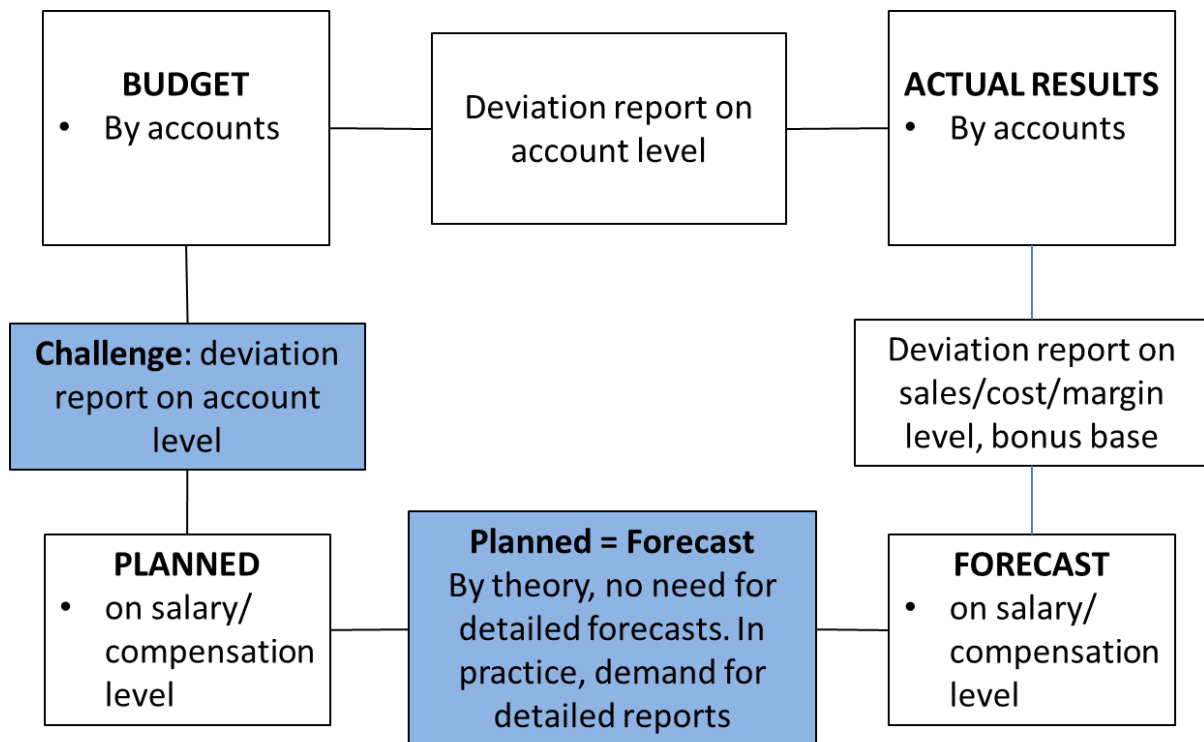


Figure 7: Challenges with reporting accuracy level

An advantage of receiving ready deviation and forecast reports from the application is the avoidance of manual errors and by saving the time and manual labor that preparing those reports e.g. by spreadsheet would take. Best-practice companies have systematically eliminated spreadsheet-based modeling and reporting as they migrate toward new technology solutions. Also, without automated data population, financial planning resources spend significant time on lower-value data gathering, validation and reconciliation activities. A common data model, hierarchies and a chart of accounts will allow for more efficient budgeting and forecasting processes. (Miller et al. 2007) With the help of the reporting functions of the new application also those persons who otherwise would not have access to financial data systems can use real time and reliable reports for performing their jobs. Another thing with the automated reports compared to spreadsheets is that there are still surprisingly many people who are not able to work with spreadsheet software.

Another advantage related to common data model, hierarchies and a chart of accounts is that it is easy to achieve benchmarking reports between different units of an organization from the system. The fact that the data is produced by the application guarantees its reliability – besides not being manipulated by anyone – the algorithms behind the calculations are the same. Data is available real time and identical for all users. Real timely and uniformity are also the features expected from a high quality forecast by Morlidge et al. (2010, 45–53).

5.4 Implementation of the application

As Lynn et al. (2004) state the challenges associated with an effective implementation of management control system are management challenges and software technology can only become part of the solution when managers are ready to use it to enhance their decision making. Here, the construction is an application and technically its implementation as a web based system is very simple: a new version of the HR system now including also this new budgeting and forecasting function is published for customer organization's use. But that is not enough for an implementation. Also consultation and training is needed for the customer organization to use the new application in an efficient way to support its decision making processes.

Caniato et al. (2011) point out that whatever the tools and the methods of a forecasting system, the way they are integrated within the organization is a key factor for the performance they produce. They emphasize the importance of the implementation phase of a forecasting system as well as the alignment of the forecasting process with the organization. As part of the implementation phase they emphasize the importance of gaining acceptance within the organization. Here the proper training can be of help.

Mr Alkio, CEO of Tieto Corporation, stated when interviewed in Kauppalehti (2011), a Finnish economic journal, on the frequent failures of the implementation of new solutions, that

“It is not understood that an implementation of a new IT system is simultaneously an implementation of a new operations model, which should affect managing and processes as well. Without this understanding, a considerable amount of problems can already be expected.”

Also Järvenpää (2007) points out that in starting a new system or method, the working practice will also typically change in some way.

Effective empowerment does not just push decision making and resources down several levels in the organization. To unleash their potential to innovate and make local decisions more effectively, subordinates must have information and training: information to provide awareness of potential problems, opportunities, and available resources: training to use tools they need to act effectively to meet local needs. (Simons 1995, 162–164)

Lynn et al. (2004) emphasize the importance of training when implementing a new application. It is one of the major risks in IT projects what is still not paid enough attention to. As part of the well-established practices in Haahtela the main user of the application is trained at a very early stage, usually at pilot testing phase. Besides the actual training to the use of the new application, also an active involvement in testing it is expected. This way pilot customer can give their input in further developing the application. Once the pilot testing period is over all the other users of the application in the organization are trained. It is recommended that besides actual user training to the application also the new ideology and improved processes are trained by customer organization's own staff. The accountability level is very different for a market-face manager if he/she is only expected to follow budget control than if he/she is expected to create rolling forecasts based on rota planning.

When this application was implemented for pilot use at the customer organization full day training was given to pilot users by researcher and Key Account Manager of Haahtela. The customer organization is presented in the next chapter. Besides the technical features of the new application the theoretical background and logic was explained and discussed with the representatives of the customer organization. The trained users are the future main users of the application. The training of market-face managers will be arranged after pilot period.

5.5 Market testing of the application

For the market testing purposes the customer organization of Haahtela used the developed and coded application for a pilot period of two months after which the representatives of that organization were interviewed. The customer organization operates in catering field with a yearly turnover around 65 M€. It operates in the whole Finland and they serve 90.000 customers daily. It employs nearly 600 people. The interviewed representatives of the customer organization were financial director, financial manager and process developer. They were selected to be interviewed because, due to their tasks in financial administration, they were all pilot testing the application. Financial director is responsible for financial administration of the whole organization including IT systems as they are mostly related to finance. Financial manager is responsible for management accounting, especially for the budgeting process. In this role she is in close contact with market-face managers. Process developer is responsible for developing service processes and for resource allocation for both equipment and for staffing. She acted earlier as project manager in the implementation project of Haahtela HR system and thus is well acquainted with the whole system.

From its decision making structure the customer organization is centralized. Financial director describes it as follows:

“We have a centralized decision making structure and we want to keep it that way. Via centralization we search for agility in our operations. It also reflects perfectly our way to manage business. The management of our organization consists of managing director and five directors. The management is the instance which makes major operative decisions. All experts and market-face managers have only one supervisor – managing director. We do not have further hierarchy in our organization structure. Even though we have managers, they are expert-managers and we have not built-in any further hierarchy.”

Rajan et al. (2006) paid attention to these flatter organizations in their study they made in the United States. Their findings suggest that corporate hierarchies are becoming flatter but they find it challenging to ascribe the label “centralization” or “decentralization” to this. In the similar way they noticed that managing directors are getting directly connected deeper down in organization, which is a form of centralization. On the other hand, decision-making authority and incentives are also being pushed further down, a form of decentralization. The tall hierarchies of the past may no longer be as effective. One reason may simply be because decisions need to be taken more quickly to take advantage of fleeting opportunities in the marketplace.

The customer organization has built their management and decision making structures based on their strategy. Also, the process around the end-customer has affected the selection of decision making structure. Further, their business field, i.e. catering, affected to it. Catering field requires short reaction times and chain management. As they operate all over Finland they see chain management as a basic assumption for guaranteeing even quality in food and customer service. The starting point for chain management is that the senior management determines certain basic guidelines to the whole organization, but market-face units are seen by the customers as local operators. Chain management is the tool for achieving internal efficiency for operational and decision making processes. Thus, the prerequisite for operations lies in chain management. With the help of chain management resources are coordinated and controlled, which are the typical elements of centralized decision making, which are, in this case used for achieving agility in the whole organization. This is in line with Hart et al. (2005) who state based on their study that if the gains to coordination are large, it is optimal for the organization to be centralized.

Market-face managers are responsible for the local resource allocation with the given resources. They are also responsible for the relationships with the local customers but in the given frames. The differences between the local customers cannot, however, affect the organization-wide set standards. If local customer relationships would be maintained in a unique way, the advantages gained by centralized decision making structure would be lost. The selected decision making structure covers the whole organization and it cannot be deviated. It has also proved to suit the organization best. The use of centralized decision making in the whole organization is in line with Simons' thoughts (2005, 2) that only one organization design can prevail.

They use traditional budgeting for planning and control purposes. Monthly forecasts are made in the budgeting year but rolling forecasting is not in use. Further they prepare long term strategic plans. Instead of the term 'traditional budgeting' they prefer using the term 'target setting process'. Their budget process starts with senior management's draft for targets which are then adapted by market-face managers to their local operations. One reason for them to use traditional budgeting is their stable market environment. According to the study of Haka et al. (2005) budget is more useful in steady business environment and rolling forecast in more turmoil environments. They anticipate more instability in their market environment in the future but intend to continue to use traditional budgeting. They do not consider the stability of the current market environment to be the main reason for using traditional budgeting. The target for customer coverage is considered a more important reason for it: what is the input that is needed for the set target and how resources are allocated in order to reach this target.

They use budget as a 'management-by-exception' system, which is a feature of diagnostic control system (Simons 2005, 142–144). The current focus is in deviation analysis and reports. As they anticipate more instability in the business environment in the future they will start taking more advantage on the market-face know how and maybe move more towards interactive use of traditional budgeting.

Even though the command chain is hierarchical and major operating decisions are made by the management, the focus is on the output and not in the way it is achieved. Market-face managers can decide in the frames determined by budget and organization-wide guidelines how they operate locally with their customers and how they use allocated resources to reach the set targets. Chain management from its part controls and coordinates local operations. For example, market-face managers prepare rotas and they are responsible for the staffing in the limits of budget. This way to

manage the process is new to them and the developed application has been seen as a useful tool in implementing these new routines. Simons (2005, 9–10) pointed out the same issue. Rather than specifying how subordinates should do their jobs and monitor compliance, managers at all levels place much more emphasis on accountability for results – leaving the actual decisions about how to achieve these results to the initiative of the workers involved.

The market testing of the application was made in two ways. Financial manager and process developer tested it in practice and evaluated its technical features and user friendliness. Financial director analyzed the usefulness of it more from the process point of view: is it supporting and what will its role be in their processes.

A clear advantage for them was that the new application was part of the HR system they already knew. This way they were already familiar with the functioning of it and this will help to implement it further to market-face managers. The prepared instructions for pilot testing were not considered adequate which caused some confusion with certain elements in the initial set up. The instructions were improved in order to ease the use of it in the future.

They considered that with the help of this application market-face managers learn to prepare rotas within budget frames due to the visibility of budget figures in rota planning. Also, as there will be more instability in the future, the application can be used to reflect better the changes in customer behavior affecting staff resourcing. They consider this kind of supporting tools very important in reflecting the changes in processes and in market environment in a very concrete level. Further they see that they could not operate in the current way without this kind of tools.

The pilot period gave the customer organization confidence in the usefulness of the application and they aim to take in use its budget function. They clearly saw the advantages created by connecting the budgeting and forecasting application with work force planning. They had already used the reports provided by this combination in explaining the year-to-date results to market-face managers. Actually, the major advantage is more linked to this combination than to the new application itself. With the help of budget feature they can see their planned work shifts in hours and euros and further, in comparison to budgeted figures. Their key ratios are calculated based on worked hours and personnel costs. Now, they can calculate these key ratios already in the planning stage and not only on results. This, giving the opportunity to market-face managers to see the key ratios already in the planning stage was considered very important as the operations are managed through key ratios.

The application was also considered an important tool in communicating the operations model from the resource allocation point of view to market-face managers. As they are in the middle of this process now, also timing for the implementation of this application was perfect.

Further, it was considered that with growing awareness the processes will be improved. With the help of the application and by its combination with work shift planning, they can combine the know-how in market-face units, to make sure that right people are in right positions and check that each market-face unit has the right combination of skilled and unskilled labor in its use. This is made from the profitability point of view, also. Thus, it is not only about costs but also about planning.

As a conclusion it can be said that the application passed the market test and that the customer organization will continue using the budget feature of application after the pilot test period is over. As a future challenge for Haahtela as their partner they see the capability to adapt in the changes they face in their operations and market environment. The same application must be useful in different markets. They expect the same agility from their partners as from themselves.

6. DISCUSSION AND CONCLUSIONS

Organizations exist in order to generate income to their owners. To achieve this target, organizations need to be effective and efficient. Efficiency is achieved by making decisions there where they are best done, i.e. where the knowledge and know how is. Sometimes efficiency is achieved by control and coordination, e.g. in multinational production companies, where it is essential that resources are available there where they are best used. Or if organization's strategy is to produce equal quality service or products all over the world, then strict guidelines should be followed everywhere and there is no room for inventions. These business strategies affect all internal functions of an organization, also budgeting and forecasting.

The purpose of this study was to analyze the compliance of budgeting and forecasting systems with organization design. Budgeting and forecasting systems were analyzed by their nature as management control systems supporting efficient decision making processes. The analysis of organization design was two-folded: on one hand it was analyzed by its decision making structure, on the other hand by the use of diagnostic and interactive control systems. For the organization design the theoretical framework was Simons' theories on Levers of Organization Design and

Levers of Control. Analysis on traditional budgeting and rolling forecasting as its complement or supplement were made on recent scholarly studies.

The theoretical aim of this study was to find compliance in the way certain kind of organizations – by their decision making structure – use budgeting and forecasting systems, either diagnostically or interactively. This study was done by constructive research approach where the construction, i.e. the novelty developed in the study, plays an important role. *The practical contribution* of this study lies in its construction, i.e. budgeting and forecasting application developed to be a part of an existing HR system, which Haahtela HR Ltd provides to its customer organizations. The aim was to develop an IT application which would support and guide the customer organizations to use the management control system, either traditional budgeting or rolling forecasting, which would best suit their organization design by their decision making structure and by the way it is used, either diagnostically or interactively.

As to this study as a constructive research, I found and still find it the most suitable approach to this study. I had been bothered for a longer time how self-evident it seems to be to most organizations to use traditional budgeting without any kind of evaluations whether it really fits their organization design. Decision making, done in right time and place, is elementary to successful business. This topic had been bothered also other researchers for decades but not in this kind of combination. Due to the innovated construction, constructive research approach seemed to be a natural choice for this study. Especially, as I had the opportunity to develop a practical solution to make this issue very concrete to customer organizations of Haahtela HR Ltd. The application has a role in resolving a managerial problem: whether to use traditional budgeting or rolling forecasting as the most suitable form of management control system in certain organizational context. This managerial problem has also theoretical relevance. Can there be found compliance between organization design and management control systems? The actual usefulness of a managerial construction is proved by market testing. This was done by interviewing the representatives of a customer organization of Haahtela HR Ltd after two months pilot testing of the application. My role as an interventionist researcher in this study was also typical to constructive research. I developed the construction, participated in its implementation and made the interviews for market test purposes. In summary, I co-operated closely with both Haahtela HR Ltd and the customer organization.

Simons has been criticized for his vague definitions on the terminology he uses in his theories. This has led to several studies the purpose of which has been to re-define terms in a more specific way in

order to escape from the risk of conceptual misspecification. In a similar way Simons provides references to attributes affecting organization design without giving clear indications to what kind of organization design certain attributes or a combination of them relates to. Simons, in his theory on Levers of Organization Design points out several factors including decision making and diagnostic/interactive control systems among other factors, but he hardly gives any guidelines on which ones would affect to the same direction or go together. One indication can be found on the compliance of centralized organization design with diagnostic control system when Simons combines centralized organizations with diagnostic control systems through critical financial and nonfinancial variables. His focus seems to be more on making managers to realize what all they should take in account when designing an organization as one of their major duties. This study adds to Simons' theory on Levers of Organization Design by giving more guidelines on the compliance of decision making structures with management control systems. The results of this study seem to provide adequate indications that there is some compliance with certain factors that could be used as guidelines to ease the designing task.

The findings of this study suggest that the management control system which complies with centralized decision making structure would be traditional budgeting as diagnostic control system. Accordingly, rolling forecasting would comply with decentralized decision making structure as interactive control system.

In centralized organizations, control and coordination of resources is in focus. The cost control function of traditional budget, which is linked to control and coordination, is one of the main reasons, why they are still widely used even though they have also been criticized. This way, traditional budgets support centralized organization structure. A basic assumption in research in management accounting seems to be that budgets serve as a diagnostic control system. Diagnostic control systems are designed to ensure predictable goal achievement. The primary purpose of budget is to set targets; it describes what we would like to happen. In accordance with hierarchical systems, the information flow also in diagnostic control system is from senior management to subordinates. And management style linked to diagnostic control systems is 'management-by-exception' which can be performed in practice by budget deviation reports. Recently, there has also been discussion on the interactive use of traditional budget. The developed IT technology with its transparency seems to support this tendency for more interactive use of budgets, too. But as technology is not the solution, but a tool, also change in behavior and working culture is needed for this change.

Organizations with decentralized decision making structures emphasizes the importance of market-face know how. They appreciate the professionalism and fresh information achieved at market-face units. Thus, the information flow in this kind of organizations is two-way: from senior management to market-face units and from market-face units to senior management. This is what interactive use of management control systems is about. Interactivity is appreciated. Market-face managers are encouraged by empowering them to use their market knowledge for running the business successfully. For this kind of managing style budget boundaries are not suitable. This is why rolling forecasting as a management control system suits better. When market-face managers are empowered, the focus is in the future. To be adaptable for the possible need to alter the business processes according to the changes in business environment. For this, accurate forecasting is needed and rolling forecasting is the suitable tool then.

Simons points out the importance of the IT systems as part of organization design. For this constructive study budgeting and forecasting application was developed. It was implemented and tested by one customer organization of Haahtela HR Ltd after which they were interviewed for market testing purposes. The market test proved to be successful. It was found to support the organization design of the customer organization both for its decision making structure and for the way they used management control system, which in their case was traditional budgeting. The results of the market test support the theoretical conclusions made based on this study. Customer organization defines their organization design as centralized one and they use traditional budgeting as a diagnostic control system. They emphasize control and coordination of resources, especially that of personnel. They value the way the new application supports and guides them to use the right management control system and in the way that best suits their organization design. This IT application takes these processes to a very concrete level and thus helps market-face managers to act accordingly.

As control is in major role in centralized organization design, it has been traditionally thought that everything has to be controlled, like in assembly lines during Taylorism where every movement had been standardized. However, it seems to be so, that nowadays, rather than specifying how subordinates should do their jobs, managers at all levels place much more emphasis on accountability for results – leaving the actual decisions about how to achieve these results to the initiative of the workers involved. Also Simons emphasizes control in context of empowerment.

Thus, a certain freedom in fulfilling their tasks has been given to subordinates. Decentralized organization design gives freedom to subordinates by empowerment. However, recently, discussion has risen whether the monitoring task of senior management can be delegated. And the answer seems to be 'no'. Thus, organizations with decentralized decision making structure have started to increase the amount of control in their processes. Would it be possible, that when centralized organizations diminish the amount of control and decentralized organizations increase the amount of control that in fact, there will not be any difference any more between these two, and thus there would be no place for this kind of study in the future? A symptom of the same kind of issue is flat organizations. When centralized organizations remove hierarchy and managing director is in direct contact with subordinates, can it be called then centralized or decentralized organization? Further, if traditional budgets are increasingly used as interactive control systems, are they still supporting centralized organization design? Or does it mean that the organization design has turned into a decentralized one?

It might be that in the future it is not possible to put labels like centralized or decentralized organization design on organizations. As the world becomes more complex maybe the structures also become more complex – or simpler, like flat organizations. This complexity was a worry of Ansari back in 1979, when analyzed the, then, modern organization designs and the compliance of traditional budgeting with it. As we know from contingency theory, there are several internal and external factors affecting organization design. This study covers only decision making structure in relation to management control systems and does not include analysis on different business environment or other external or internal elements affecting organization design.

When I started this study, I assumed that the business world was ready to operate without budget constraints and rolling forecasting would be the future management control system. Further, I assumed that organizations would have become more decentralized over time. It was a surprise to me that centralized decision making structure still seems to have a firm foothold in business life and even further, it seems to adapt to the modern business environment by turning into new forms of centralization, like 'McDonaldization'.

6.1 Limitations and future studies

Within the time limit of this study it was possible for me to make this study as a full constructive study all the way from the innovation to its market testing, thus fulfilling all the phases of constructive research as presented by Kasanen et al. (1993). As to the practical contribution of this

study it could be seen as a limitation that the application was implemented for market testing only by one customer organization of Haahtela HR Ltd. But as pointed out by Kasanen et al. (1993) it is already a success as risk to be a failure is rather big in this kind of constructive study.

Kasanen et al. (1993) divide market tests in three: weak, semi-strong and strong. This market test was a weak one. It proved that managers responsible for the financial results of his or her business unit have been willing to apply the construction in question in his or her actual decision making as by definition. For the future studies, it would be interesting to make semi-strong market test by Survey method after the implementation of the application by other customer organizations of Haahtela HR Ltd. Unfortunately, due to the time limit of this study it was not possible to make this kind of further testing of it. Even more interesting it would be to make strong market test to this application. Then it would be studied over accounting years whether the business units applying the construction systematically produced better financial results than those which are not using it. This could be performed in customer organizations by comparing financial results before and after the implementation of the application. Also, it would be interesting to study, whether the cost control or accuracy of forecasts were improved since the implementation of this application. Again, giving the time limit of this study, this kind of further study was not possible to be made.

As Kasanen et al. (1993) point out, it should be noted that even the weak market test is relatively strict — it is probably not often that a tentative construction is able to pass it. For instance, there is no lack of formal optimization models which supposedly solve managerial control problems but which no one is using in practice. The question whether a construction passes the semi-strong or strong market tests is a typical mainstream accounting research task, requiring statistical analysis of a substantial amount of implementation data, the occurrence of which may take a good deal of time.

As management accounting is also about people and their behavior it is not adequate that selected management control system fully complies with organization design. Employees must be motivated to support the selected system and decision making structure. For this the role is given to pay for performance. Unfortunately, it was not possible to study this element here in context with this issue but it would be an interesting theme for future studies.

Referring to Malmi et al.'s (2008) study on MCS as a package it could be considered as a limitation that this study did not include any further analysis on traditional budgeting and rolling forecasting

as part of a MCS package. It is quite understandable that there might arouse differences in conclusions depending on the role – major or minor – of selected MCS in a package. E.g. if rolling forecasting has a minor role among other management control systems an organization uses, its use could be less interactive.

As proved by contingency theory, many internal and external factors affect organization design. Thus, I leave it to the future researches to add a new element on the conclusions of this study to further study their affects and whether they would change the initial conclusions presented here.

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Interviews

Customer organization of Haahtela HR Ltd, Financial Director, 12 October 2012

Customer organization of Haahtela HR Ltd, Financial Manager, 12 October 2012

Customer organization of Haahtela HR Ltd, Project Developer, 12 October 2012

APPENDIX: INTERVIEW STRUCTURE

1. Job title and responsibility areas in organization
2. How would you describe the decision making structure of your organization (centralized or decentralized one)?
3. Which resources do you mainly coordinate and which processes/costs control?
4. To what extent are your market-face managers empowered, if any?
5. Does the current decision making structure cover the whole organization or are there variations by units?
6. Do you find the selected decision making structure the most suitable for your organization?
7. Who is your major customer?
8. Is your decision making structure based on the determination of this main customer?
9. Do you use traditional budgeting or rolling forecasting?
10. Do you find the selected management control system to be the most suitable for your organization and decision making structure?
11. Does the selected management control system support organizational strategy?
12. To what extent do you take advantage of the market-face knowledge of your managers in forecasting?
13. Do you use the selected management control system in diagnostic or interactive way? Please describe how it is used.
14. Who makes work shift planning in your organization?
15. Is this in compliance with your decision making structure?
16. Do you find the new budgeting and forecasting application to support your decision making structure?
17. Do you find it possible to utilize the new budgeting and forecasting application in the use of selected method?
18. Do you think that the new budgeting and forecasting application improves your processes?
19. Will you start using the application after pilot period? To what extent?

20. If you will use in the future both budgeting and forecasting functions of the application, do you think that your market-face managers find themselves in a contradictory situation? On one hand they would need to obey the set standards and on the other hand they would be empowered to make operative decisions. To what extent would they be empowered then?
21. To what direction do you anticipate that the market environment will change in the future? Will it affect the way you use the application?