



# **Management Accounting and Control :** the Diversity and Opportunities in Research and Research Methods

Edited by

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# HANDELSHØYSKOLEN I TRONDHEIM

## Workshop Management Accounting & Control

*- the diversity and  
opportunities in research  
and research methods*

Papers to the workshop at Oppdal  
9-11 October 2013

Handelshøyskolen i Trondheim /  
Trondheim Business School

This TØH-notat contains papers presented at the workshop 9th – 11th October 2013 at Oppdal. The workshop had the following theme *“Management accounting and control – the diversity and opportunities in research and research methods.*

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Trondheim, October 2013

Professor Inger Johanne Pettersen.

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<b>Wed 9<sup>th</sup> Oct</b>		
12.00-13.00	Lunch at Skifer Hotel Oppdal	
13.00-1330	<b>Room: Skifersal 3</b> Welcome by Inger Johanne Pettersen	
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15.00- 18.00	Paper presentations – parallel sessions	
	<b>Room</b>	<b>Skifersal 3</b>
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	1500-1545	Kari Nyland & Charlotte M. Andreassen, <i>Trondheim Business School</i>
		Frode Kjærland, <i>Trondheim Business School</i>
	1545-1630	Per Christian Ahlgreen, <i>Trondheim Business School</i>
		Liv Bente H. Friestad, <i>Handelshøyskolen v/Universitetet i Agder</i>
	1630-1700	Break
	1700-1730	Per Ståle Knardal, <i>Trondheim Business School</i>
		Elsa Solstad, <i>Harstad University College &amp; Inger Johanne Pettersen, Trondheim Business School</i>
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		Torild Oddane & Grete Wennes, <i>Trondheim Business School</i>
19.00	Dinner	
<b>Thur 10<sup>th</sup> Oct</b>		
09.00-1200	Paper presentations	
	<b>Room</b>	<b>Skifersal 3</b>
	0900-0945	Mikael Cäker, <i>Handelshögskolan i Göteborg</i> & Kari Nyland, <i>Handelshøyskolen i Trondheim</i>

	0945-1030	Johnny Lind, <i>Handelshögskolan i Stockholm</i>	
	1030-1100	Break	
	1100-1145	Katarina Kaarbøe, <i>Norwegian School of Economics &amp; Business Administration - NHH</i>	
1200-1300	Lunch		
13.00-1400	Key note speech Prof. Sami Saarenketo, Lapperanta University of Technology: <i>The role and importance of international accreditation of business schools and programs- some thoughts and critical reflections.</i>		
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	1615-1700	Antonina Tsvetkova, <i>Handelshøyskolen i Bodø</i>	Stine Rye Bårdsen, <i>Handelshøyskolen v/Universitetet i Agder</i>
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<b>Fri 11<sup>th</sup> Oct</b>			
09.00-10.00	Key note speech Prof. Gudrun Baldvinsdottir, Trondheim Business School: <i>Actor-Reality Construction- A Pragmatic Constructivist Approach to Management and Accounting</i>		
10.15-11.30	Paper presentation		
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	1015-1100	Frode Kjærland, Trondheim Business School & Levi Gårseth-Nesbakk, Handelshøyskolen i Bodø	
	Summing up		
1130-1230	Lunch		

# 4. Management accounting tools in banks: are banks without budgets more profitable?

**Trond Bjørnenak**

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## INTRODUCTION

The book *Relevance Lost: The Rise and Fall of Management Accounting*, which was published more than 20 years ago, introduced a debate and sparked academic interest in new forms of management accounting, new management control ideas and potential solutions (Johnson and Kaplan, 1987). The main argument was that information provided by typical management accounting and control systems came too late, and was too aggregated and distorted by financial reporting to be relevant for decision making. Furthermore, the book suggested that these systems did not support communication or the implementation of strategies. In response, a number of new management accounting tools were introduced, including activity-based costing (ABC) systems and balanced scorecards. Table 4.1 contrasts the traditional systems (before *Relevance Lost*) with the modern solutions (after *Relevance Lost*).

After the publication of *Relevance Lost*, textbooks were changed, and

*Table 4.1 Changes in management accounting and control systems*

Dimension	“Traditional systems”	“Modern systems”
Costing	Simplified full costing	Advanced ABC systems
Cost objects	Departments and products	Multi-dimensional: customer, markets and distribution channels
Data sources	Internal	Internal and external
Time perspectives	Ex post	Ex ante (rolling forecasts, target costing)
Performance measures	Financials	Combinations of financials and non-financials, e.g., balanced scorecards

### *Managing in dynamic business environments*

the new concepts and tools were given significant attention. More than 50 percent of the concepts listed in the 1982 edition of Horngren's *Cost Accounting: A Managerial Emphasis* (Horngren and Foster, 1982) were not included in the 2005 edition (Horngren, Foster and Datar, 2005) and vice versa. A dominant share of these changes related to concepts and tools discussed in the *Relevance Lost* debate, such as activity-based costing and balanced scorecards (Ax and Bjørnenak, 2007).

In the past decade, a new debate has emerged. This time, the movement, which is known as "Beyond Budgeting," is driven by a group of practitioners and consultants. Beyond Budgeting is a practice-defined concept that has taken many different forms. However, all instances of Beyond Budgeting have a common platform in that they serve as a critique of budgets. One of the pioneers in this movement was the Swedish bank Svenska Handelsbanken, which abandoned budgets as early as the 1970s.

These two critical movements in management accounting practice and research motivated this study. This study is informed by the success of Handelsbanken. Although other Scandinavian banks have followed Handelsbanken's example, the use of budgets in the Norwegian banking sector has not previously been investigated. In this regard, we identify the number of banks that do not rely on budgets and the characteristics of these banks, and we investigate how budgets are used and found useful in other banks. We also address the use of other tools in the industry with the purpose of understanding which tools are used and the extent to which they are found useful. Finally, we explore the association between the tools used and various measures of performance effects.

The chapter is organized as follows. First, the Handelsbanken case is presented. Second, the research method and variables are discussed. The findings from the survey study are then presented, while finally limitations and ideas for future research are discussed.

## **SVENSKA HANDELSBANKEN – A SUCCESSFUL BANK WITHOUT BUDGETS**

In 1970, Jan Wallander took over as CEO of Sweden's Svenska Handelsbanken (hereafter Handelsbanken). One of his first moves was to abandon budgeting (Wallander, 1994, 1999). The decision did not receive much attention until the 1990s when Wallander published the book *Budgeten: Ett onödigt ont* [Budgets – an unnecessary evil] (1994). The book was written in Swedish, but a shorter version was published in English in the *Scandinavian Journal of Management* in 1999 (Wallander, 1999). This case has since been cited in a number of books and articles as a classic

case of Beyond Budgeting, and Wallander is often described as a Beyond Budgeting pioneer (Hope and Fraser, 2003a, 2003b; Lindsay and Libby, 2007; Bogsnes, 2009).

Wallander's inspiration for abandoning budgets arose from his years as a professional economist. Prior to coming to Handelsbanken, he worked at a research institute specialized in providing long-term forecasts for different variables (e.g., demand for electronics). These forecasts were based on historical trends, and breaks in the curves could not normally be foreseen. He saw this as one of the main problem with budgets, as they prevented management from identifying the important issues that made a difference.

The alternative outlined by Wallander was to keep the management control system simple:

It is evident that the kind of information I am talking about are the figures that to a large extent you already have or should have in your profit and loss account and balance sheet and your ordinary information systems. What you have to do is to organize and construct them in such a way that they fit the demand. (Wallander, 1999:413)

Handelsbanken's solution was to focus on relative financial performance (benchmarking branches on costs, profit and losses) and a profit-sharing bonus plan (see Lindsay and Libby, 2007, for more details). The simple system was not kept secret in any way. The bank did not implement balanced scorecards, rolling forecasts or advanced activity-based costing systems. Nevertheless, Handelsbanken has continually outperformed other Scandinavian banks. The bank has reported an ROE above the industry average for almost every year since 1972, while its total annual shareholder return has been more than 20 percent over the same period. The most obvious profit driver has been cost-efficiency, with the cost/income ratio at approximately 45 percent (the industry average is above 60 percent).

The existence of a high-performing bank without budgets in which "modern" advanced management accounting tools are not used motivated this study of Norwegian banks for several reasons. First, although Handelsbanken is Swedish, it is one of the largest banks in Norway, and its success and its control system are well known in the industry. Second, some Norwegian banks have followed Handelsbanken in abandoning budgets (see [bbbt.org](http://bbbt.org)). Third, the high number of different banks within the Norwegian banking industry, all generally operating in the same market, may give us interesting insights into the use of different tools in management control systems.

*Managing in dynamic business environments***THE STRUCTURE OF THE STUDY**

The study started with an investigation of the control system in Handelsbanken, which is described in detail in different books and articles (Wallander 1994, 1999; Lindsay and Libby, 2007). In addition, one of Handelsbanken's larger branch offices was visited and its managers were interviewed. Two Norwegian banks were also visited in order to collect background information.

The survey was then sent to 118 of the largest Norwegian banks. The largest Norwegian bank (DnB) was excluded because it works under different (more international) conditions, while the other banks mainly focus on the domestic market. Foreign banks active in the Norwegian market, such as Handelsbanken, were not included.

The Norwegian economy has experienced stable growth in recent decades, mainly driven by the booming oil industry. Although Norwegian banks were affected by the financial meltdown in 2008, all of the banks in the dataset showed a surplus in 2010 and 2011, and losses on bad loans were rather low in the period of investigation (2009–11). None of the banks included in the initial sample had problems fulfilling the capital requirement set by the financial supervisory authority (Basel II). Thus, all of the targeted banks were profitable and solid and faced relatively stable market conditions during the period of investigation.

Data were collected on three issues:

1. *The use and perceived usefulness of different management accounting tools, including budgets, benchmarking, activity-based costing, balanced scorecards, rolling forecasts and customer profitability accounting.* These were identified as the most important tools in the two banks analyzed in the pre-study. Respondents were asked to indicate the extent to which they used different tools using a five-point Likert scale (1 5 "not at all," 5 5 "to a very large extent") and the extent to which they found the tool useful (1 5 "useful only to a very limited extent," 5 5 "very useful").
2. *The degree to which respondents agreed with 18 different statements dealing with budgeting critiques.* This was measured on a five-point Likert scale (1 5 "totally disagree," 5 5 "totally agree"). The statements were consistently negatively loaded, and were mainly adopted from Libby and Lindsay (2010) and Ekholm and Wallin (2000).
3. *Measures of performance.* Three measures of success or bank performance were used. First, the perceived usefulness of different management accounting tools was included in the questionnaire (as shown in 1). The other two – the cost/income ratio (an important perform-

ance measure in Handelsbanken and used by the industry) and return on equity (used in the industry) – were measured using accounting data collected by the Norwegian Saving Banks Association (Sparebankforeningen). The data were publicly available on the association's webpage. Reliability was tested using accounting data for ten of the banks. The test did not identify any reliability problems.

The survey was undertaken in the spring of 2010 and specifically asked respondents to focus on the tools used in 2009 (Johansen, 2010). Performance measures were based on accounting figures for 2009.

In total, 81 banks returned the questionnaire. Ten of the 37 non-responding banks indicated that they did not have time to complete the questionnaire. This gives a response rate of 69 percent, which is relatively high when compared to similar studies (e.g., Naranjo-Gil et al., 2009; Libby and Lindsay, 2010). Each bank's CFO was asked to answer the survey, because decisions to adopt any of the investigated tools are often made by the top management team and because the CFO is a key person in the introduction or implementation of changes, for example the abandonment of budgets. The focus on CFOs is in line with other studies of management practices (Young et al., 2001; Naranjo-Gil et al., 2009). We tested for possible non-response bias with regard to size, profitability and cost-efficiency, but found no significant differences.

## FINDINGS

This section presents the results of the survey. First, there is a description of the adoption rates for different tools and how different tools were used in combination. Second, the CFOs' responses to different statements on potential problems with budgets are presented. Third, the link between the use of different management accounting tools and two performance measures is explored.

### **The Use and Perceived Usefulness of Management Accounting Tools**

Table 4.2 shows the use and perceived usefulness of different management accounting tools.

The adoption rate for activity-based costing (ABC) is very low. Only one of the banks had fully implemented ABC, while five others had done so to some degree and six had implemented it to a low degree. These adopters do not find ABC highly useful. The other tools are more common and, on average, seen as useful. Notably, 72 of the 81 banks used budgets. We



*Managing in dynamic business environments**Table 4.2 Use and perceived usefulness of management accounting tools*

Level of use	ABC	BSC	Benchmarking	Rolling forecast	Customer profitability analyses
Did not use (1)	85%	47%	21%	17%	16%
Low (2)	7%	11%	11%	14%	22%
Some (3)	6%	14%	24%	35%	35%
High (4)	0%	15%	36%	21%	26%
Fully implemented (5)	1%	14%	9%	14%	1%
Usefulness	2.56	3.68	3.87	3.56	3.57

*Notes:*

ABC  $\bar{S}$  activity-based costing; BSC  $\bar{S}$  balanced scorecard.

N  $\bar{S}$  81 for level of use, but only users are included in the calculation of usefulness.

Usefulness is an average on a Likert scale of 1–5.

*Table 4.3 Use and usefulness of budgets for different purposes*

Purpose	Planning	Coordination	Resource allocation	Motivation	Evaluation	Reward
Use	3.88	3.28	3.33	3.43	3.94	2.86
Usefulness	3.90	3.31	3.51	3.38	3.82	3.17

*Notes:*

N  $\bar{S}$  72.

Likert scale of 1–5.

asked these banks about the use and usefulness of budgets for different purposes. The results are shown in Table 4.3.

Budgets are commonly used for planning and evaluation, and they are seen as highly useful for these purposes. Budgets are less often used in reward systems, but they are also viewed as useful for this purpose. The high proportion of users (89 percent of the total) and the level of perceived usefulness for the main purposes show that budgets hold a strong position in the management control systems of Norwegian banks.

Tools may be used in different combinations. An analysis of the correlations between the use of different tools is given in Table 4.4.

Only a few of the tools are significantly correlated. The use of ABC is correlated with the use of BSC. The uses of both tools are also significantly correlated with size, that is, larger banks are using ABC and BSC. Other tools are not strongly correlated with size. Thus size may be the underlying

Table 4.4 Correlations (Pearson) between the use of different tools

	ABC	BSC	Benchmarking	Budgets	Rolling forecast
ABC					
BSC	***0.333				
Benchmarking	*0.199	***0.311			
Budgets	0.085	0.076	0.052		
RF	0.16	0.111	***0.336	0.032	
Customer profitability analyses	0.038	0.053	**0.219	0.175	0.149

Note: Significance levels \* p > 0.1, \*\* p > 0.05, \*\*\* p > 0.01.

Table 4.5 Correlation (Pearson) between the use and usefulness of different tools

Use	Perceived usefulness					
	ABC	BSC	Benchmarking	Budgets	Rolling forecast	Customer profitability analyses
ABC	***0.498	0.046	0.103	0.101	-0.089	0.029
BSC	0.153	***0.836	0.163	-0.019	0.048	0.158
Benchmarking	0.055	**0.239	***0.720	0.072	*0.206	**0.277
Budgets	-0.017	-0.012	-0.044	***0.682	0.053	0.15
Rolling forecast	0.045	0.042	**0.255	0.143	***0.767	**0.253
Customer profitability analyses	0.063	0.026	***0.286	**0.248	0.072	***0.747

Note: Significance levels \* p > 0.1, \*\* p > 0.05, \*\*\* p > 0.01.

factor for the correlation between ABC and BSC. Benchmarking is correlated with many of the other tools, which may be explained by the nature of the benchmarking, that is, benchmarking is typically integrated with performance measures, customer analyses or forecasting.

In order to investigate the link between the use and usefulness of different tools, we correlated use with perceived usefulness. The results are shown in Table 4.5.

Notably, use and usefulness are highly correlated for all tools. In other words, CFOs seem to perceive the tools used in their organizations as

### *Managing in dynamic business environments*

useful. We also tested for interaction effects, that is, the use of budgets combined with the use of other tools and the level of usefulness of other tools, but did not find any significant results. Most significant in this respect is the finding that the use of a budget is not correlated with the perceived usefulness of other tools. This may indicate that budgets are not highly integrated with other tools.

This study of the adoption of different tools shows that, with the exception of ABC, the tools investigated are used by Norwegian banks and that the banks that use them find them useful. The use of these tools is highly correlated with perceived usefulness, a finding that may question the validity of studies based on the perceived usefulness of different tools. Budgets are the most widely used and are believed to be very useful. This implies that the view held by Jan Wallander and Handelsbanken is not generally accepted in the industry.

#### **The Relevance of Critiques of Budgets**

The previous section showed that budgets play an important role in the control systems of Scandinavian banks, despite the problems covered in the Beyond Budgeting literature. In this section, we investigate whether the bank CFOs agree with some of the claims made in that literature. In total, 18 different statements were tested. We used an approach similar to that found in Neely et al. (2003)<sup>1</sup> in that we looked at problems related to: 1) the budgeting process, 2) organizational and individual behavior and 3) strategic focus and value creation. These areas are discussed in more detail below.

#### **Problems or weaknesses in the budgeting process**

The budgeting process as a whole is often an endeavor requiring considerable amounts of time and resources (e.g., Neely et al., 2003) from the different layers of an organization. Thus budgets need to be developed, redrawn when needed and approved. After approval, they are often revised and different types of analyses are performed, including prognoses and variance analyses. Top management (e.g., the board of directors) often requires monthly or quarterly reports, and updates regarding corrective efforts when budgets are not met. The sheer number of participants in the budgeting process tends to prolong the process. Along these lines, in their study of US and Canadian companies, Libby and Lindsay (2010) found that the budgeting process took slightly more than ten and six weeks (median), respectively. Similarly, Hope and Fraser (2003a) claim that the budgeting process absorbs up to 30 percent of management's time. The scope of the budgeting process is also supported by Neely et al. (2003),

who claim that as much as 20 percent of management time is spent on (planning and) budgeting practices.

Other aspects of the budgetary process have also been questioned. Most critical, perhaps, is the process's reliance on underlying assumptions about the future. Although such assumptions are inevitable given the nature of budgeting, the frequency, reliability and extent of these assumptions can hamper the benefits derived from the budgeting process. According to Wallander (1994, 1999), a budget is often no more than an extrapolation of the past and present, as the organization finds it too difficult and time-consuming to analyze these assumptions in detail. Thus, according to Wallander (1999), companies tend to make their predictions by looking at the past or by assuming the "same weather tomorrow as today." According to Hope and Fraser (2003b), Bogsnes (2009) and others, this lessens the company's ability to adapt to the ever-changing business environment. Furthermore, although Wallander (1999) admits that forecasts are inevitable, he suggests that their value will ultimately rely on their accuracy. Such assumptions range from general forecasts made by external experts (e.g., governmental bodies) on factors such as prices and wages to the interpretation of those forecasts in the organization and in specific parts of the organization (e.g., departments). Thus there is uncertainty related not only to the general forecasts but also to how those forecasts are incorporated into the different layers of the organization.

Similarly, budgets and the assumptions made in the budgeting process have been criticized for quickly becoming outdated (Hope and Fraser, 2003b). Libby and Lindsay (2010) investigated this issue in detail in their US survey and found that 65 percent of respondents "somewhat" agreed that outdatedness was a problem, whereas 40 percent "agreed" or "strongly agreed." These figures suggest that this particular issue can indeed be problematic for many organizations.

Another critique relates to the calendar rhythm of the budgeting process. Wallander (1999) refers to the budget as a yearly ritual. The Beyond Budgeting literature calls for a more dynamic (flexible) process (Bogsnes, 2009) in which resources are allocated based on ongoing judgments, targets are adjusted according to changes in the environment and prognoses are updated more frequently than every 12 months. In this respect, Hope and Fraser (2003b) emphasize that decisions should be made on a continuous basis and not according to the calendar. Furthermore, the fact that budgeting is often viewed as a yearly ritual (Wallander, 1999) may be one reason why budgets are poor in signaling changes relevant to the management of organizations. Hope and Fraser (1999) suggest that, as budgets are unable to cope with the changing competitive environment, they lack the responsiveness and agility needed to meet customer needs.

*Managing in dynamic business environments**Table 4.6 Average response to statements related to the budget process*

	Mean (St. dev.)
<i>Time and assumptions</i>	
Too much time is spent on budget-related activities (e.g., developing, revising, reporting, variance analysis, etc.).	2.74 (1.14)
Budgets are heavily based on uncertain assumptions about the future.	2.91 (1.03)
The assumptions on which budgets are built are quickly out of date/outdated.	2.90 (1.02)
<i>On flexibility and dynamics</i>	
Budgets prevent responsiveness because they are poor in signaling changes in the surrounding environment.	2.89 (0.96)
Budgets prevent responsiveness to changes because they are difficult to alter after they are approved	2.57 (1.01)
Budgets prevent responsiveness to changes because it is difficult to get funds allocated outside the budget.	2.16 (0.93)
Budgets hamper responsiveness because they mainly/heavily focus on achieving budget targets rather than maximizing value creation	2.83 (1.15)

*Notes:*

N 581.

Likert scale of 1–5.

Moreover, Hope and Fraser (1999: 18) describe the general features of the budgeting process as “such a slow, rigid and often highly ‘political’ process,” which “is a major handicap in today’s fast changing competitive environment.”

Based on the above critiques, we asked respondents to indicate the extent to which they agreed with seven different statements. The results, which are shown in Table 4.6, indicate that these critiques find little support in practice. All statements have an average of less than 3 on the five-point Likert scale, and the medians were 2 or 3 for all statements. If we exclude the nine banks that did not use budgets, the averages were even lower. All banks provided responses.

**The influence on organizational and individual behavior**

According to Neely et al. (2003), budgets and, to some extent, the budgeting process can make room for, and even encourage, dysfunctional behavior that results in actions and decision making that do not add value to the company as a whole. More specifically, Neely et al. (2003: 22) state that traditional budgeting methods “are counterproductive in that they are

usually affected by gaming, corporate politics and horsetrading tactics.” Hope and Fraser (2003b) suggest that the budget serves as a “fixed-performance contract.” Hope and Fraser (2003a: 113) take this part of the critique even further, claiming that “budgets can result in ‘earnings management’ or even outright fraud.”

Thus budgets often lack incentives that would encourage employees and departments to act in the best interest of the company. Instead, employees or departments promote their own interests. Typical examples include instances when departments, divisions or similar units protect their own interests at the expense of the company, that is, by choosing projects and investments that benefit the department rather than the company, by negotiating budgetary targets that can easily be reached, by overestimating the resources needed to ensure that adequate resources are at their disposal or by using resources when such use is not necessary in order to ensure that the next period does not bring a cut in resources. Other examples involve deferring revenues or expenses in order to achieve budgetary targets. Many of these issues are also valid on an individual level. These problems are often referred to as budgetary gaming (Hope and Fraser, 2003b). In general, they are related to what Hope and Fraser (2003b) term the “budget contract,” which contains a number of fallacies (see Hope and Fraser, 2003b: 6–8). Interestingly, Libby and Lindsay (2010) find a significant negative correlation between budgetary value and gaming, that is, more gaming reduces the value of the budget.

Given the problems inherent in budgeting with regard to detecting or signaling business changes, some researchers claim that budgets reinforce vertical control, leading to a situation in which relevant information on how to deal with emerging issues is lacking (Neely et al., 2003; Bogsnes, 2009). Thus advocates of Beyond Budgeting suggest that making room for decentralized decision making makes it easier for an organization to adapt to changes, which in turn favors organizations, as they encounter these issues at an early stage. In other words, they can be proactive when dealing with changes, rather than reviewing them in hindsight when it may be too late to respond properly.

In relation to dysfunctional behavior, the existence of departmental budgets and targets may have a negative impact on cooperation and the sharing of knowledge in the organization (Hope and Fraser, 2003b; Bogsnes, 2009). Information, experiences and ideas may not be communicated throughout the organization, as departments are focused on their own best interests and on protecting their advantages at the expense of the rest of the organization. A focus on achieving budgetary targets may even provoke elements of hostility among different parts of the organization. This also relates to budgets lacking the incentives necessary to ensure that

*Managing in dynamic business environments**Table 4.7 Statements on behavioral effects of budgets*

	Mean (St. dev.)
Budgets hamper cooperation and knowledge sharing between departments owing to the heavy focus on achieving own budgetary targets.	2.62 (1.03)
Budgets may lead to the negotiation of targets lower than those actually achievable to make it easier to reach budgets.	3.07 (1.10)
Budgets may lead to an overestimation of resources to ensure an adequate supply of resources.	2.93 (1.05)
Budgets may cause assigned funds to be spent before the end of one period in order to prevent reduced funding in the next period.	2.23 (1.14)
Budgets may lead to deferring revenues and/or costs to ensure that the period's budgetary targets are met.	2.63 (1.05)
Budgets may lead to expediting costs when budgets will not be met.	2.40 (1.02)

*Notes:*

N = 81.

Likert scale of 1–5.

the entire organization is moving in the same direction and to support consideration of what is best for the company as a whole. Thus the importance of learning and knowledge sharing, and the need to attend to human capital and other resources are pivotal to ensure the necessary innovations and ideas are being applied and adapted in everyday activities.

Six statements based on these critiques were included in the survey. The results are shown in Table 4.7. Consistent with Libby and Lindsey (2010), we find indications of budgetary gaming among the banks' responses. However, there is a low level of agreement with all of the other statements.

**Strategic coherence and value creation**

Strategic coherence, and the link between strategy and performance measures have increased in importance and relevance in recent years. As discussed earlier, some researchers claim that budgeting has too many roles and purposes, and that it centers on short-term target setting and resource allocation. These factors inhibit the budget from being clearly linked to the overall strategy of the organization. Overall, an assertion has been made that budgets cannot be aligned with strategy, as these elements are prepared in isolation (Hope and Fraser, 2003b). This is partially related to the frequent emergence of goal conflicts, and the lack of superior goals or objectives that would help to resolve such conflicts. In the presence of

Table 4.8 Integration of budgets in the strategic process and value creation

	Mean (St. dev.)
Budgets are poorly linked to the organization's strategy.	2.42 (1.09)
Budgets add little value because they focus too heavily on financial performance measures at the expense of other strategically important indicators/measures.	2.58 (0.93)
Budgets add little value because they focus on cost reduction rather than value creation.	2.51 (0.94)
Budgets create little value because they focus on achieving budgets rather than creating value.	2.57 (1.11)
Budgets create little value because they focus on routines rather than creative thinking and value creation.	2.67 (1.04)

Notes:

N 5 81.

Likert scale of 1–5.

dysfunctional behavior and an over-reliance on financial performance measures, goal conflicts may escalate. As financial performance measures are often short-term by nature, employees' attention in the absence of a strategic focus will tend to be on historical conditions rather than on strategic, long-term thinking subject to some concrete goals and objectives (Hope and Fraser, 2003b; Neely et al., 2003; Bogsnes, 2009).

Researchers also claim that, in today's ever-changing business environment, organizational cooperation and the importance of the ability to foster creativity and innovativeness contrast the bureaucratic nature and formalized routines inherent in budgeting ("command and control"; see Bogsnes, 2009). Furthermore, budgets focus on costs and on variance analyses rather than on the exploration of strategic opportunities. This may result in exploitation rather than exploration and a failure to recognize potential new sources of income. In total, a focus on costs may lower the firm's overall value creation. In relation to value creation, Hope and Fraser (1999) argue that future cash flows are likely to flow from intangible assets, which they claim that budgets are not designed to manage or control.

The empirical results for five statements related to these critiques are shown in Table 4.8. The results are not very supportive of the critiques.

In summary, the findings show that the use and usefulness of budgets are supported by the generally low agreement with claims found in the Beyond Budgeting critique. Only one of the 18 statements has an average of more than 3. However, the proportion of "strongly agree" (5) varies



### *Managing in dynamic business environments*

from 5 to 20 percent for the different statements, which shows that some CFOs have adopted a critical view.

#### **The Link between Management Accounting Tools and Performance**

The success of management accounting innovations can be measured in numerous ways. According to Cinquini and Mitchell (2005), the most common measure of the success of ABC is the adopter's perceived view of the tool. Ittner and Larcker (2009) question the reliability of this measure and call for more studies that link management accounting systems to actual financial performance.

In our study, we linked the survey data to two different performance measures:

- *Return on equity (RoE)*. ROE is the most commonly used measure of financial performance in banks. One important weakness is that this measure is not risk adjusted and it does not adjust for the leverage of the bank.
- *Cost/income ratio*. This ratio is used by the bank association for benchmarking. It is also one of the most important measures reported in Handelsbanken.

In order to investigate the associations between the uses of different tools we use OLS regression analyses using the performance measure as the dependent variable and different tools in use as independent variables. Use is measured on Likert scale of 1–5. Size (measured as total capital) is also included in the analyses. The results for RoE are shown in Table 4.9.

We see that budgets are significantly negatively associated with performance, while benchmarking, size and customer profitability are positively associated with RoE. The coefficient for BSC is negative, but not significant. In order to validate the results we asked the banks with budgets whether there had been any changes in the focus on budgets in the last years. None of the banks claimed to have increased the focus on budgets (some have reduced it, but the majority did not make any changes). Thus the potential explanation of banks increasing focus on budgets when financial performance is low was not supported.

Note that this does not prove that there is a negative cause-and-effect relationship between budgets and performance. However, it indicates that budgets are not necessary for high performance. It is also interesting to note that Handelsbanken is strongly using benchmarking and relative performance as a key factor in its control system. ABC, rolling forecasts, BSC and budgets are used only to a low degree or not at all in Handelsbanken.

Management accounting tools in banks

Table 4.9 Association between ROE and different tools in use

Variable	R <sup>2</sup> (adj.)	P-value
	26.90%	0.001
	Coefficients	P-value
Intercept	6.247	0.003
Budgets	-1.1033	0.021
ABC	-0.1544	0.822
BSC	-0.3703	0.258
Benchmarking	1.2247	0.002
Rolling forecasts	0.1095	0.766
Customer profitability analyses	0.8354	0.054
Size (1000 million NOK)	0.04726	0.046

Notes:  
N = 81.  
OLS regression.

Table 4.10 Association between tools and cost/income ratios

Variable	R <sup>2</sup> (adj.)	P-value
	12.10%	0.02
	Coefficients	P-value
Intercept	56.84	0.001
Budgets	1.613	0.165
ABC	-0.397	0.813
BSC	1.421	0.078
Benchmarking	-2.065	0.033
Rolling forecasts	0.550	0.542
Customer profitability analyses	-1.223	0.246
Size (NOK 1000 million)	-0.11125	0.055

Notes:  
N = 81.  
OLS regression.

The key to Handelsbanken's success has been its low cost/income ratios (around 40 percent; see, for example, Lindsay and Libby, 2007). The results of the OLS regression for cost/income ratios are shown in Table 4.10. The model explains less of the total variation than the RoE analysis. Benchmarking and size are associated with lower costs. One interpretation might be that benchmarking and size are positively associated with higher

*Managing in dynamic business environments**Table 4.11 Association between performance and tools*

Tools	RoE		Cost/income		Usefulness (adopters)
	Coefficients	P-value	Coefficients	P-value	
Benchmarking	1.17	0.004	-2.07	0.033	3.87
Budget	-1.10	0.021	1.61	0.165	3.17-3.90
BSC	-0.37	0.258	1.42	0.078	3.68
Customer Profitability analyses	0.84	0.054	-1.22	0.246	3.57
ABC	0.15	0.822	-0.40	0.813	2.56
Rolling forecasts	0.11	0.766	0.55	0.542	3.56

profitability through lower costs. The coefficient for budgets is positive (higher costs) but not significant. Note that the use of balanced scorecards is also associated with higher costs (significant at the 0.1 level).

In summary, we have three indicators of success, which are shown in Table 4.11. Benchmarking is widely adopted, and is perceived as very useful by the adopters. It is positively associated with higher profitability and lower costs. Budgets are the most used tool among banks, and are seen as very useful for different purposes. However, budgets are negatively associated with RoE. Balanced scorecards are also used by a high number of banks and are seen as very useful. The more they are used, the greater the perception that they are useful. However, the tool is negatively associated with cost-efficiency. Customer profitability analyses are seen as very useful, and they are positively associated with higher RoE. For rolling forecasts and ABC, we find no significant associations between use and financial performance. Furthermore, for ABC, the adoption rate and the perceived usefulness are low.

## CONCLUSIONS AND FUTURE RESEARCH

This study of the adoption of different management control tools by Norwegian banks shows the Handelsbanken model has not been widely copied. Only nine of the 81 responding banks did not use budgets. A simple test of differences between banks without budgets and banks with budgets showed that the former had higher RoEs and lower cost/income ratios than banks with budgets in all years from 2006 to 2010. Furthermore, the difference was significant in 2006, 2007 and 2008. Therefore, Norwegian banks without budgets appear to be more profitable than banks with

budgets. However, this conclusion is based on only one differentiating factor (budgets or no budgets).

The study presented in this chapter includes the size of the bank and the use of other tools. It also includes the extent to which budgets are used and the use of budgets for different purposes. When we include the level of use, we find a significant negative relationship between the use of budgets and financial performance. However, this does not serve as proof of a cause-and-effect relationship. The study does not control for the point at which a specific tool was adopted or the time at which budgets were removed. It is therefore difficult to trace the effects of such changes. However, the results show that there is not a conflict between a lack of budgets and cost-efficiency and profitability.

Beyond Budgeting is a practice-defined concept that takes many forms. Some companies that remove budgets replace them with other tools, such as rolling forecasts and versions of the balanced scorecard. Others, such as Handelsbanken, do not implement the new, more advanced tools introduced after the publication of *Relevance Lost*. The results of this study do not support the utility of the advanced solutions, as we do not find positive associations for balanced scorecards and rolling forecasts.

The nine banks without budgets differed to a statistically significant extent with regard to the use of two tools – benchmarking and customer profitability analyses – which they used to a greater degree. These tools are also significantly associated with higher profitability. Thus it is difficult to separate the effects of removing budgets from the effects of introducing benchmarking or customer profitability analyses.

It may seem paradoxical that budgets still are among the most important tools in banks' control systems – the more they use budgets, the less profitable they are. This paradox should be addressed in future research. The results of such research may give us an indication of how systems work. In order to better understand the cause-and-effect relationships, we need a deeper understanding of how the different tools are used and how the functions are filled when budgets are removed. This requires more field studies of banks with and without budgets.

## NOTE

1. Neely et al. (2003) conducted a thorough literature review and undertook interviews with representatives of cutting-edge or leading companies to identify the most commonly cited problems or weaknesses inherent in budgeting. Neely et al. (2003) used three main categories: 1) competitive strategy, 2) business process and 3) organizational capability.

*Managing in dynamic business environments*

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# QUANTITATIVE RESEARCH IN MANAGEMENT ACCOUNTING (QMAR) - WHY RELEVANT AND HOW TO IMPROVE?

Oppdal Workshop, October 9<sup>th</sup>, 2013.

Trond Bjørnenak, Norwegian School of Economics



NHH



## Plan

- Present some of my work as excellent examples of quantitative research
- Some of the problems
  - Driven by data not a research problem (or management accounting)
- But with a potential
  - To investigate some problems
- And could be improved
  - By interaction with other researchers

## But what is quantitative research in MA (QMAR)?

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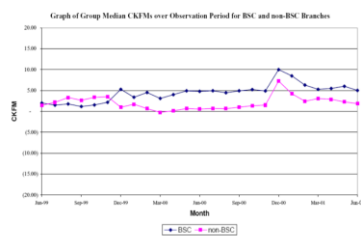


- Research that uses data that may be represented *numerically* and are of a *quantity and quality* to support empirical analysis using parametric or non-parametric statistical methods. (Anderson and Widener, 2007)

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## Problems: There are many examples like these... (BSC research)

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Monthly median performance in BSC and Non-BSC Branches. The BSC program began in July 1999 in the BSC branches.  
Fig. 4. Graph of group median CKFM over observation period for BSC and non-BSC branches.

Davis & Albright (MAR, 2004)

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## Or this..... (EAR, 2009)

### 6. Conclusion

While the BSC continues to be adopted by a large number of firms, our study demonstrates that the BSC contributes positively to organisational performance.

De Geuser, Mooraj, Oyon (2009)

The data for the analysis were collected in 2000, from a survey sent to European companies that had recently developed a Balanced Scorecard. Because no 'ready-to-use' database on BSC adopters existed, we identified the organisations of our sample through the lists of attendances to four BSC conferences for practitioners.

This gave us a response rate of 14.5% for the surveyed organisations and 9.5% in terms of the number of questionnaires sent. This is close to prior response rates for similar surveys (Foster and Swenson, 1997).



## What is the purpose QMAR?

- To test and build theories
  - Most of the published articles is of the testing type
- Example: Does complexity drive costs?
  - Informed by the ABC debate in early 1990s
  - Identification of complexity drivers in different industries
  - Foster and Gupta (1990); Banker and Johnston (1993); MacArthur and Stranahan (1998)
- And informed other interesting studies







## Another favorite: Diffusion studies

- How and why do companies adopt innovations?
  - Exploratory and explanatory research on the diffusion of e.g. BSC
  - Tor-Eirik Olsen; BSC in Hospitals and higher education
  - Informed by theory (Abrahamson, 1999) and other diffusion theories
  - Followed up by interviews



## Why are these good examples of QMAR?

- It is informed by theories and practice
  - Porter (1985)
  - Diffusion theory
- It acknowledge the importance of context (industries)
- It is of importance to practices and management accounting

## Back to the 1990s



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- What are companies doing/ NOT DOING?
- If we want to give a picture of practice we need to be more focused
  - Industry, background, position
- And we can develop constructs and aggregate

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## Survey studies as a source of information

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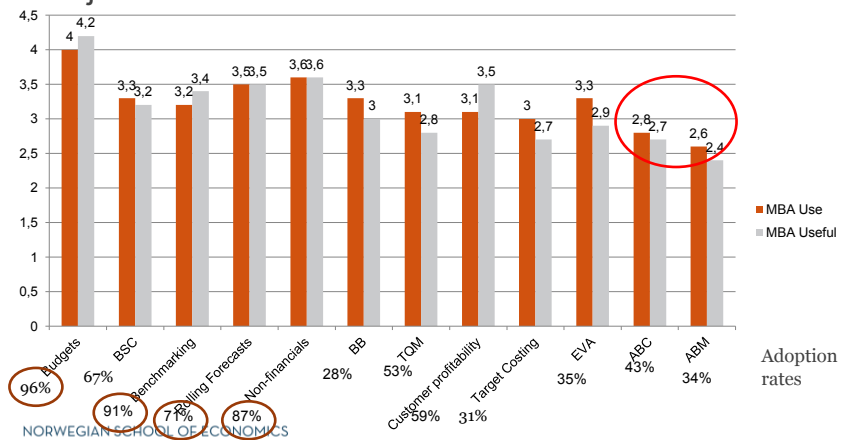
- Respondents (all Norwegian)
  - 109 Executive MBAs (RR: 59%)
  - 81 Banks (CFO; RR: 69%)
  - 50 Higher education institutions / Universities (CFO; RR: 74%)
  - 37 Health entities / hospitals (CFO; RR: 71%)
- Questionnaire (2010-2011):
  - Use and perceived usefulness of budgets and other MA tools
  - 18 statement on budget problems (adopted from Ekholm and Wallin, Libby and Lindsey ++).
- Pre-tested, tested for response bias
  - respondents larger for Universities
- Factor analysis: 18 statement into 4 factors
  - FLEXIBILITY; TIME&ASSUMPTIONS; GAMING; VALUE CREATION;
- Follow up interviews
  - Five banks, >10 Universities and Hospital

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Adoption rates, use and usefulness  
 Norwegian Executive MBAs (2010)  
 Response: 109 (RR: 59%)



Homogeneity: Information field – but different industries and jobs



Budgets for different purpose in Universities, Hospitals and Banks



	Universities (N=37; 100%)	Hospitals (N=20; 100%)	Banks (N=72; 89%)
	Use (usefulness)	Use (usefulness)	Use (usefulness)
Planning	3.92 (4.28)	4.10 (4.20)	3.87 (3.90)
Coordination	3.19 (3.36)	3.25 (3.45)	3.28 (3.31)
Resource allocation	3.84 (4.37)	4.10 (4.10)	<b>3.33 (3.51)</b>
Motivation	2.81 (3.00)	3.15 (2.85)	<b>3.43 (3.38)</b>
Reward	2.11 (2.53)	2.05 (2.58)	<b>2.86 (3.17)</b>
Performance evaluation, control and follow-up	3.61 (3.57)	<b>4.07 (3.85)</b>	3.94 (3.82)

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## Factor analyses: Problems with budgets are different (CFOs)

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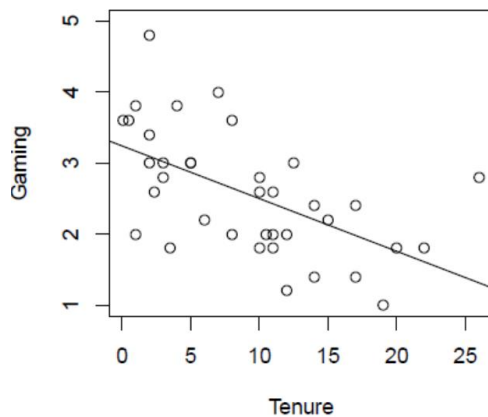
Factor	Mean (St.dev.)			
	Univers	Hospitals	BANKS	Combined
<b>GAMING</b>	2.57 (0.87)	<b>3.03 (0.78)</b>	2.65 (0.86)	2.68 (0.86)
<b>TIME &amp; ASSUMPTIONS</b>	<b>2.43 (0.79)</b>	2.80 (0.90)	2.85 (0.97)	2.73 (0.93)
<b>VALUE CREATION</b>	2.53 (0.99)	2.73 (1.02)	2.58 (0.92)	2.59 (0.95)
<b>FLEXIBILITY</b>	2.78 (1.09)	3.03 (1.06)	<b>2.36 (0.88)</b>	2.57 (0.99)

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Interesting?

## AND CFO characteristics are important: Gaming and Tenure (Universities)

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## What have we learned?

- That the average picture is not very interesting
  - But budgets are still the most used and most useful tool
  - ABC and ABM is not
  - Information field has an effect
- Differences are more interesting
  - Differences in adoptions
    - Industry and CFO characteristics
  - Differences in perceived problems
    - Information field
    - CFO characteristics
    - Industry (not only public sector / private sector)

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## What does it mean to be useful /successful?



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## What is meant by MAI success?

- Success equals participants' view of it
- Conditions indicative of MAI success
- Success equals the continuing existence of the MAI
- Success equals the meeting of objectives
- Success equals improvement on existing information
- Success as evidenced by the organizational use of the MAI
- Success equals change in decision-making
- Success equals financial benefit

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## Success equals participants' view of it?

- Personal opinions of individuals based on their impressions formed through contacts with MAIs
- Results are taken as being indicative of the success levels in the operations of the MAI

Example (Kennedy & Affleck-Graves (2001))

7. How would you rate the overall success of the introduction of the ABC techniques in your firm? (Tick as appropriate)

**Degree of Success**

Very successful \_\_\_\_\_  
 Fairly successful \_\_\_\_\_  
 Neutral \_\_\_\_\_  
 Fairly unsuccessful \_\_\_\_\_  
 Very unsuccessful \_\_\_\_\_

Example (Foster & Swenson, 1997)

*How successful do your supervisors/team leaders regard your ABCM efforts?*

*How successful do your department managers regard your ABCM efforts?*

*How successful do your line personnel regard your ABCM efforts?*

1=Complete failure 2=Unproven 3=Moderately successful 4=Very successful 5=Extremely successful

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## But then we are measuring what they are doing? (Norwegian banks)

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N=81	Perceived	Usefulness				
USE	ABC	BSC	Benchmarking	Budgets	Rolling forecasts	Customer profitability
ABC	***0,498	0,046	0,103	0,101	-0,089	0,029
BSC	0,153	***0,836	0,163	-0,019	0,048	0,158
Benchmarking	0,055	**0,239	***0,720	0,072	*0,206	**0,277
Budgets	-0,017	-0,012	-0,044	***0,682	0,053	0,150
Rolling forecasts	0,045	0,042	**0,255	0,143	***0,767	**0,253
Customer profitability	0,063	0,026	***0,286	**0,248	0,072	***0,747

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## Using different measures (Ittner, Larcker and Randall, 2003)

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Table 8  
The relation between financial performance and performance measurement alignment techniques; t-statistics in parentheses

	Satisfaction	ROA	Sales growth	1-year stock returns	3-year stock returns
Intercept	-0.353*** (-3.757)	0.0105 (1.341)	0.192** (2.301)	0.0109 (0.091)	-0.301* (-1.923)
Economic value	0.454*** (3.026)	0.0037 (1.165)	-0.0427 (-1.516)	0.0345 (-0.739)	0.0259 (0.493)
Balanced scorecard	0.537*** (2.957)	-0.0117*** (-2.787)	-0.0371 (-0.995)	-0.0616 (-0.968)	-0.0225 (0.283)
Business modeling	0.676*** (3.250)	0.0078* (1.67)	0.0477 (1.119)	0.0271 (0.407)	0.0348 (0.428)
Sector performance		0.354*** (5.055)	0.660*** (4.351)	0.869*** (3.378)	1.223*** (3.677)
SIZE		0.0018 (1.256)	0.0059 (0.696)	-0.0034 (-0.229)	0.0232 (1.329)
BTOM		-0.0115*** (-2.643)	-0.204*** (-3.437)	0.0033 (0.053)	0.0366 (0.339)
Adj. R <sup>2</sup>	0.187	0.263	0.258	0.057	0.078

Economic value = 1 if the firm uses economic value measures, 0 otherwise; balanced scorecard = 1 if the firm uses a balanced scorecard, 0 otherwise; business modeling = 1 if the firm makes extensive use of formal, causal business modeling, 0 otherwise. See Table 4 for other variable definitions.

- \*  $P < 0.10$  (2-tailed).
- \*\*  $P < 0.05$  (2-tailed).
- \*\*\*  $P < 0.01$  (2-tailed).

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## How to improve this type of research

- The purpose: Not to find a statistically significant coefficient, but to give a level of understanding to correlations
- Combining measures most contribute to our understanding, not be driven by available data
- We need a deep understanding of the companies we are studying
  - Why I should study banks, hospitals and universities
  - Why we should be careful to give (some) PhD students a dataset



## An example: Understanding the effects of tools in Norwegian Banks

- A case study of Handelsbanken
- 10 years of working with a Norwegian bank (4 years as the chairman)
- Quantitative study (correlations)
- Following up with presentations of findings and open discussions
- Improved understanding of WHY
- Improved discussions in the banks



## Associations between use and performance (Return on Equity) - OLS regression

NHH



Number of observations	Adj R2	P-Value
81	26,90 %	0,000 ***
Variable	Coefficients	P-Value
Intercept	6,247	0,003
<b>Budgets</b>	<b>-1,1033</b>	<b>0,021 **</b>
ABC	-0,1544	0,822
BSC	-0,3703	0,258
<b>Benchmarking</b>	<b>1,2247</b>	<b>0,002 ***</b>
Rolling forecasts	0,1095	0,766
<b>Customer profitability</b>	<b>0,8354</b>	<b>0,054 *</b>
<b>Size</b>	<b>0,04726</b>	<b>0,046 **</b>

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## Summing up different measures in Banks

	ROE		Cost/Income		Usefulness (adopters)
	Coefficient	P-value	Coefficient	P-value	
Benchmarking	1,17	0,004	-2,07	0,033	3,87
Budget (Yes/no)	-2,25	0,134	2,11	0,559	3,1-3,9
Budget (1-5)	-1,10	0,021	1,61	0,165	3,1-3,9
BSC	-0,37	0,258	1,42	0,078	3,68
CP	0,84	0,054	-1,22	0,246	3,57
ABC	-0,15	0,822	-0,40	0,813	2,56
RF	0,11	0,766	0,55	0,542	3,56

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## Example 2: Customer profitability

- Øyvind Helgesen, experienced CFO
  - We do not understand our costumers profitability
  - 1. Knew the industry (fish exporters) and the problems they where facing
  - 2. Calculated the customer profitability
  - 3. Questionnaire to the top mangers
  - 4. Correlated with actual calculations



## Perceived profitability

**Table 1.** Absolute customer accounting figures: (1) associations between managers' perceptions and estimated figures taken from customer accounts

Respondent	No. of cases	Coefficient
1	22	0,209
2	22	0,225
3	22	0,615**
4	22	0,175
5	22	0,136
6	22	0,222
7	22	0,058
8	22	0,096
9	21	0,285
10	30	0,028
11	30	0,285
12	30	0,357*
13	31	0,135
14	31	0,351*
15	31	0,165

3 of 15 significantly  
better than random



## They agree within companies

Table 5. Relative customer profitability: associations concerning the perceptions of the managers of one of the fish exporting companies

Kendall's tau statistic	Manager A	Manager B	Manager C	Manager D	Manager E
<u>Coefficient of association:</u>					
Manager A					
Manager B	0,502**				
Manager C	0,502**	0,436*			
Manager D	0,735**	0,645**	0,568**		
Manager E	0,248	0,386	0,620**	0,497**	

Significant correlation between managers within the same company in 9 out of 11 cases (profitability and credit ratings)



## What did we learn?

- That management accounting may make a difference in performance
- That the difference is not context free
- We should be careful with perceived success measures
- We should not try to find different measures of success that are highly correlated or use «what we have», but measures that can extend our understanding of the effects
- We should use data from industries that we think we understand
- We should present the results to practitioners in order to learn WHY



## Papers

- Bjørnenak, T. (2013) Management accounting tools in banks: are banks without budgets more profitable? Forthcoming
- Bjørnenak, T. & Olsen, T-E. (2013). On the relevance of Beyond Budgeting in the Public Sector, Working paper
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# **Horizontal co-ordination in hospitals - On the interaction between formal and informal controls**

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## ***Abstract***

In complex organizations managers need a wide perspective on management control, and the interplay between formal and informal processes has for a long time been recognized as important for managers to understand. In this paper we want to contribute to the understanding of how different controls interact in complex, professional organizations. The issue is studied through a case study of the coordination of services from the anesthesia department (AN) and orthopedic surgery (OS) in a large university hospital in Norway, two departments that are hierarchically separated but mutually dependent. We put forward the following research question: How can different controls contribute to the coordination of medical services across two clinical departments treating the same patients? The formal, vertical control mechanisms seem to create challenges for horizontal coordination. However, interaction with informal mechanisms enables loose control and operational flexibility. This is characterized by the legitimization of social controls and the significant amount of trust between actors at different levels in the hierarchy. The study shows close links between mechanisms, suggesting that different sources of influence should be studied in context. We also discuss the relationship between the different sources' influence and the nature of the activity to be controlled. This indicates that the understanding of how different mechanisms interact depends on the nature of the activity and should not be regarded as generic.

## Introduction

Norwegian hospitals have during the last ten years gone through several “New Public Management” inspired reforms to increase efficiency and to make managers accountable for the use of resources . The underlying aim for these reforms has been to formalize vertical coordination and control, which have made hospital units more specialized and hierarchically organized. Management control systems have been designed to increase transparency and accountability between managers at different levels, however a recent study shows that horizontal mechanisms are not well implemented in Norwegian hospitals (Pettersen and Solstad, 2013).

The vertical focus has influenced the ability for different units to collaborate and coordinate activity on a horizontal level by creating the need for separate management control systems (Kraus & Lindholm 2010). One such formal mechanism is activity based financing, which is implemented in departments with a suitable, measurable activity. The financing system is creating strong incentives to increase activity in some medical functions at the hospital, while other functions are still funded by fixed grants, facing quite different incentives. This obviously creates significant control challenges since the creation of value occurs in the composition of medical services from various functions in the hospital. Thus, the need for coordination is significant, while the formal framework is challenging.

In complex organizations managers need a wider perspective on management control. An alternative is to rely on the professionals and their expertise and experience to get the job done in a best possible way. The interplay between formal and informal processes which operate within organizations, has for a long time been recognized as important for managers to understand (Hopwood, 1976). Nevertheless, this is still an unexplored area. Several studies in management accounting and control point to a gap in the literature to describe how formal and informal coordination mechanisms interact in both vertical and horizontal control systems (Malmi & Brown, 2008, Sandelin 2008, Albernethy and Stoelwinder 1995, van der Meer-Koistra and Vosselman 2000, van der Meer-Koistra and Scapens 2008 to mention a few).

In this paper we want to contribute to the understanding of how different controls interact in complex, professional organizations. We have chosen to study this issue through a case study in a hospital consisting of several parallel hierarchies where the creation of value depends on how well various specialties are able to cooperate in the treatment of patients. We study the coordination of activities between two departments that are highly interdependent since their services must be performed at the same place, at the same time, and on the same patient; the cooperation between the anesthesia

department (AN) and orthopedic surgery (OS). The formal basis for coordination is, however, demanding. The departments belong to different clinics (hierarchies) located in separate buildings within the hospital area, and they are funded in different ways. AN is a medical service department financed through a fixed budget, while OS is facing a flexible, activity based budget. Thus, the departments are facing different incentives regarding the determination of level of activity. We put forward the following research question: How can different controls contribute to the coordination of medical services across two clinical departments treating the same patients? To be able to study the influence of the professions as well as formal controls, we focus our study at the operational level in the departments.

The paper is structured as follows. First, a theoretical framework is given, focusing at different forms of control, formal and informal control mechanisms and the interaction between these. Then the context is described, and different sources of influence and the use of control mechanisms in coordinating medical services at two departments (AN and OS) are discussed. The discussion will be summarized by outlining some empirical findings. Last, some concluding reflections are offered to contribute to our understanding on how activities are coordinated at an operational level in a hospital.

## Theoretical perspective

The control system can be seen as an instrument to draw boundaries to surround people in the organization, to encourage, enable and sometimes force managers and employees to perform in the interest of the organization. The literature points to a variety of forms of control and control mechanisms that can be used for this purpose.

Management control systems have traditionally been designed to increase transparency and accountability between managers at different levels within the organization. In our case, the two local hierarchies in the hospital are controlled by one common top management. Nevertheless, the hierarchies represent autonomous entities facing quite conflicting incentives. The success of the hospital depends on how well different functions are able to coordinate their activities. Such a setting makes the literature on inter-organizational control relevant. We will look into what this literature suggests about the design of a control system to also draw boundaries around the collaboration between two (more or less) independent organizations.

### *Different forms of control and control mechanisms*

The traditional perspective is to define management control based on the assumption that someone (different levels of managers) is seeking to control the behavior of others (employees). Ouchi (1979) identifies three different forms of control; outcome control, behavior control and clan control. Which form is most efficient depends on knowledge of the transformation process and the ability to measure output. Ouchi (1979) also describes three different groups of coordination mechanisms: market-, hierarchy- and clan mechanisms. These are rare in pure form, but traditionally work in combination with each other.

The market as a coordination mechanism is mainly described in terms of coordinating transactions between autonomous units acting in a market. In such settings, price will be the principal carrier of information and coordinate the scope of transactions. Within a public hospital, the conditions will be different as no markets exists for services. An approach to a market mechanism may be the use of transfer pricing. When a market does not exist, the literature recommends cost-based transfer prices to help regulate the scope of delivery between different units by contributing to goal congruence and help sharing the value created between the units to provide a basis for evaluation (Horngren et al. 2012, Merchand & Van der Stede 2007).



The hierarchy is based on rules and standards that participants in an organization must relate to. Drawing on Malmi and Brown (2008) this may be mechanisms such as planning, cybernetic controls, reward and compensation mechanisms and different administrative controls. These control elements may then be based on the desired outcome (outcome control) or on desired behavior (behavioral control).

Control mechanisms of the market or bureaucratic variety may fit well in stable manufacturing industries where output is measurable, and the causal relationships between effort and performance are well known. In hospitals, it is a familiar dilemma that output and especially the quality of the output is difficult to measure. In such organizations dominated by professionals performing complex tasks, hierarchical controls may be poorly suited. An alternative may be to trust the professionals to make decisions based on their expertise and experience.

*“Organizations in public sector, in service industries, and in fast-growing technologies may not fit these specifications and perhaps should have cultural or clan forms of control instead”*  
(Ouchi, 1979, p 845)

Cultural controls is another concept that covers mechanisms like clans, values and symbols (Malmi and Brown, 2008), also termed as informal, social control mechanisms (Ouchi 1979, Cäker 2008). While hierarchical mechanisms are associated with formal rules and norms, social control mechanisms are often associated with trust; managers trust individuals to take responsibility to carry out tasks assigned to them (Ouchi 1979). In terms of management information this implies that managers have confidence that individuals will seek the information they need. What kind of information this is, will depend on the situation and may vary over time and between different decisions. The need for information thus requires flexibility and adaptability, and individuals may collect information also outside the formal control system (Jonsson and Grønlund 1988).

Hopwood (1974) assumes a slightly different perspective on control when he discusses three different influences on behavior; managers, groups within or even outside the organization, and individual values and characteristics. These sources of influence is described as administrative control (managers), social control (groups) and self-control (individual). The control process may be described as an ongoing competition for influence from these three sources.

Thus, coordination and control may be described from two different perspectives, based on characteristics of the mechanism used or on who is influencing behaviour. The term “clan control” may according to Ouchi (1979) imply that a manager (for various reasons) trust individuals to take

responsibility to carry out the tasks assigned to them eg. based on their professional norms or other norms developed within the group. Drawing on Hopwood (1974) this may be based on “social control” indicating that one or different groups influence the behavior of the staff. In the following, we identify how managers, different groups and individual values and skills influence the coordination of activity between functions in a hospital. By doing this, we also identify different control mechanisms in use.

### *The interaction between different forms of control*

From a management control perspective, it is important to understand the interaction between different sources of influence and how managers may control the impact of the other forms of control. It is usually assumed that social-and self-controls may support the bureaucratic forms of controls, and that training and socialization processes may help balancing individual and organizational goals and values (Ouchi 1979). Thus the various forms of control may be seen as complementary. Managers may seek to influence the development of norms and values within professional groups or restrict employees' decision space through the use of hierarchical controls. However, sometimes group- or individual values may be quite different from those pursued by the organization, and an important question is what happens when people are influenced by different forms of control simultaneously.

Abernethy and Stoelwinder (1995) study the conflict that occurs when strong professional groups (doctors and nurses) who are trained to perform complex tasks and whose behaviour is primarily controlled through social and self-control mechanisms, are faced with bureaucratic mechanisms that restrict their autonomy. They find that professionals who feel that they are limited by output controls (eg strict budgetary control), are experiencing higher level of role conflict and achieve lower job satisfaction and performance. They conclude that

*“Not only will these controls (output control) not operate effectively, they are likely to have adverse individual and organizational effects”* (Abernethy and Stoelwinder, 1995, p 13)

They did not find the corresponding relationship between professions and behavior control. This is explained by the fact that behavioral control is performed by persons within the same professional expertise, and thus considered an acceptable means of control.

### *Horizontal coordination*

Traditionally management control systems in hospitals have been criticized for being too vertically oriented (Otley 1994, Cäker 2008, Cäker and Siverbo 2011). Hierarchical management processes such as the strategy process, budget process, performance measurement, reporting and evaluation have been directed along the lines of responsibility in functionally oriented organizations, focusing on the internal efficiency within separate functions. Systems to support coordination between functions have been less developed (Pettersen and Solstad, 2013).

The concept of horizontal control means that there are several interests to be taken into account, and the challenge is to achieve a balance of interests and power. There is an extensive literature that studies the horizontal control between organizations, such as the relationship between manufacturers and their suppliers (see Cäker (2008) for an overview). According to van der Meer-Kooistra and Scapes (2008) findings from this literature may also be relevant for understanding the relationship between departments within an organization.

While it was previously assumed that coordination between organizations primarily was based on formal mechanisms like transactional contracts, Cäker (2008) finds that informal mechanisms and trust may also be important in these settings. Trust may create the necessary flexibility in a relationship that is essentially characterized by strict bureaucratic control. Informal mechanisms may be especially important at the operational level, due to high complexity. Trust may originate from prior experiences and shared norms and values. Earlier studies show that professionals within health organizations have a common loyalty towards the patient and not necessarily to their employing organization (Albernethy, 1996). On a more general basis, Håkanson and Lind (2004) suggest that frequent interaction between groups may drive the development of shared norms and values and thus facilitate cooperation across organizational boundaries. They suggest that both informal and formal interaction such as the development of joint plans and systems, may contribute to the adaptation of common goals and accountabilities. Regular contact contributes to the development of a common culture, and through the establishment of venues for joint problem solving, units may develop common knowledge and make decisions that contribute to common goal achievement - even if they do not belong to the same organization.

Horizontal relations at operational level are generally characterized by high mutual dependence, often high complexity and continuous changes. In such a context, it is impossible to design a formal control system that addresses all possible challenges. When senior managers do not possess the necessary operational knowledge, their subordinates will be expected to control their own lateral relationships.

In such situations it is important that managers facilitate and support control by creating a decision space that enable decisions at operational level (van der Meer-Kooistra and Scapes 2008).

At the operational level, many individuals may be involved. To understand the coordination mechanisms within this perspective, it is necessary to study these actors and the relationships between them through rich case descriptions.

Her trenger vi en tabell evt figure som virser hvordan vi vil gå videre med disse dimensjonene/kategoriene av controls I casestudien. Evt. En presisering av forskningsspørsmålet på bakgrunn av våre teoretiske perspektiv;

Research question:

How may different controls contribute to coordinate services ...?

- a) Describe the different controls in action...
- b) How do different controls interact?
- c) How do managers, groups and individual values influence...?

## **Method**

The first introduction to the challenges for coordination between the AN and the OS was based on an inquiry by a leader at a clinic level at the AN. This inquiry motivated the first step of data collection which was conducted by a master student at Trondheim Business School (Hovland 2012) in close cooperation with one of the co-author of this paper. After a thorough review of the data conducted by Hovland (2012), we saw the empirical story in the data was connected to the use of formal and informal coordination mechanism. The literature gave us new insight in the problematic the departments was facing, and helped us aim the study. Based on the limitations of prior knowledge to the subject investigated in this paper, we conducted a research design that makes it possible to utilize knowledge as it is obtained, so that important factors are not overlooked. A research method that

enables this is a case study using interviews (Yin, 1994). Case study as a research method to study management control systems has been inquired in empirical accounting research, primarily because of the importance of capturing the organizational context (see eg Kaplan 1986). Going into the organization's natural surroundings provides richer access to data compared to other scientific methods:

"More and more we feel the need to be on site, and to be there long enough to be Able to understand what is going on. (...) For while systematic data create the foundation for our theories, it is the anecdotal data that enable us to do the (theory) building "(Mintzberg, 1979, p 587)

Our study was conducted in two steps. The first step was completed in spring 2012 where the focus was on coordination at a hospital/clinic level. Interviews were conducted with the CEO and different clinic manager. This gave insight into the formal organizing of the hospital. Documents were also used to draw the formal chart of the organization of the hospital. Interviews were also made at an operational level, mostly about the effect and challenges the differences in the financial system was creating. Both of the authors have years with experience in doing hospital research and had good insight into the formal organization of the hospital. A total of 11 interviews were conducted in this phase (see table 3). Based on the findings from this part, we went ahead and studied coordination at the operational level. It was conducted five in depth interviews with formal decision makers at an operational level (see Table 3). Since the formal decision makers at an operational level is relatively few (operational level consisting of managers and section managers at two departments), the number of respondents in this part of the study is relatively few.

Table 3 describes an overview of the interviews conducted in this study. The interview of the clinic manager 3 is from a previous data collection, which were included in this study as the interview contained information about management contract.

Date	Function	Pages	Time
<b>First step data collection:</b>			
21.03.2012	CFO	4	
21.03.2012	Constituted leader for doctors in AN	5	
21.03.2012	Clinic manager orthopedic clinic and leader of the OS	7,5	
22.03.2012	CEO	3	
26.03.2012	Controller orthopedic clinic	5	

26.03.2012	Department manager doctors at AN	5,5	
30.03.2012	Medical leader of the orthopedic clinic	5,5	
11.04.2012	Controller anesthesia clinic	6,5	
11.04.2012	Clinic manager anesthesia clinic	13	
17.04.2012	Department manager nurses OS	6,5	
17.04.2012	Department manager Emergency surgery rooms	6	
<b>Interview about management contract:</b>			
18.04.12	Clinic manager 3	18**	01:39:00
<b>Second step data collection:</b>			
12.12.2012	Department manager Emergency surgery rooms	14**	01:09:37
18.12.2012	Department manager nurses AN	15**	00:57:37
20.12.2012	Section manager nurses AN on OS	16**	01:24:11
02.01.2013	Department manager nurses OS	12**	00:55:33
02.01.2013	Section leader nurses OS	11,5**	00:43:35
In total		154	06:49:33*

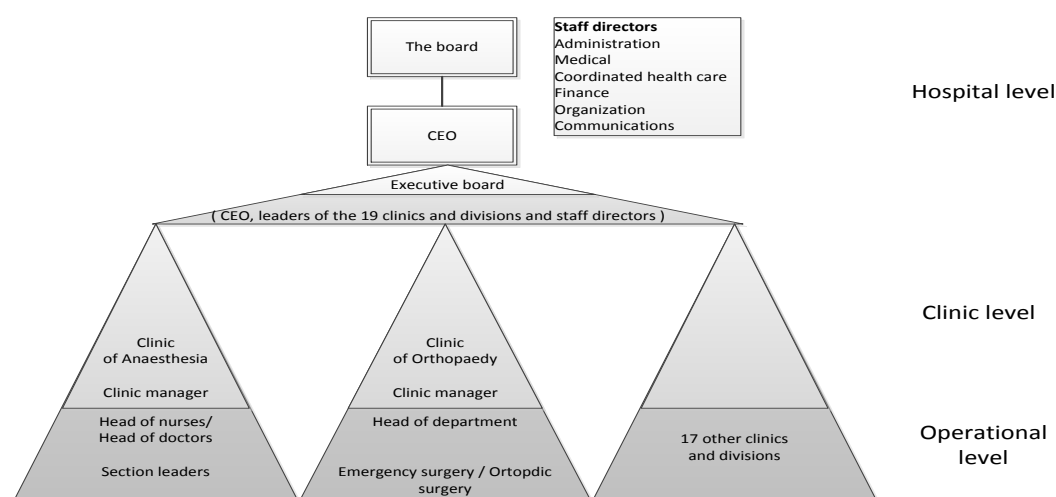
Table 3 Data collection

\*The time for the interviews conducted in step 1 is not included

\*\* The interviews from step 1 are transcribed in another format

## Case description

The formal structure of the hospital has evolved during the last ten years due to reform ideas describing hospitals as effective, autonomous and transparent entities. The hospital structure was previously centered on clinics and divisions all localized together in one building. In 2003, the director changed the formal organization of the hospital. A new clinic structure was established, organizing medical specialties into separate clinics to strengthen the lines of accountability (see figure 1). A total of 19 hospital clinics and divisions were organized as autonomous entities with finance, human resources and professional responsibility to ensure vertical coordination and control. Professionals within the same medical field were gathering together in clinics under a clinic manager as showed in table 2.



**Table 2 Formal organization to ensure hierarchical control**

The focus in our case study is the coordination of activity between the department of anesthesia and department of orthopedic. Two departments those are separated hierarchically, but mutually dependent:

### *Department of anesthesia (AN)*

Clinic of anesthesia and emergency medicine were organized in one clinic in 2005 to strengthen the research community in anesthesia and facilitate efficient utilization of capacity within this service. The clinic provides services to other clinics that include anesthesia during surgery, ventilator assistance, pain management and intensive care nursing. All units at the hospital that performs operations rely on anesthesia services. This means that the anesthesia clinic provides service to many

clinics and departments located in different centers. The department of orthopedic surgery is one of the main users of the anesthesia services.

Clinic of anesthesia and emergency medicine consists of several departments. The focus in our analysis is centered to the anesthesia department (AN). The department is organized into two units (doctors and nurses). Each unit has a manager, and the manager has a section manager that operates as a coordinator. The department managers report directly to the clinic manager who is also responsible for several other departments e.g. intensive and ambulance. The section managers do not hold any financial responsibilities.

### *Department of orthopedic surgery (OS)*

OS operates acute injuries and performs most types of surgery in the field of orthopedics. The department belongs to the clinic for orthopedics, rheumatology and skin diseases and is located in the Motion Centre, which is the building next to the emergency center where the clinic of anesthesia is located. The clinic of orthopedic, rheumatology and skin diseases is divided into 7 departments, including the department of orthopedic surgery

OS operates eight operating theaters. Orthopedic surgeons and nurses and anesthesia doctors and nurses work closely together at these operation theaters. If one of the professions is missing, the theater is closed, and the patient cannot be operated. The quality of the surgery depends on close cooperation between both orthopedic and anesthesia professionals. In the operating theater planned (elective) surgeries is the main activity. These are patients that are signed up for a surgery, often planned several months in advance. The operating theaters are basically open between 0730 and 1530. The capacity of the room is planned to be fully booked every day, but it happens quite often that there are delays. It must then be decided whether a surgery should be delayed to another day, or whether to use overtime to see the patient through surgery that day.

### *Different financial incentive systems*

To increase the autonomy of the clinics, the activity-based funding model is implemented within the hospital. However, this model applies only to those clinics that have their own patients and where the activity can be measured using the DRG system. This is the case for the orthopedic clinic. For



service clinics, that support the treatment of patients belonging to other clinics, measuring the level of activity is more difficult. Thus, service clinics, like the anesthesia clinic, are financed through a fixed budget.

### **The use of formal and informal mechanism to coordinate activities across departments**

According to many broad definitions of control mechanism, coordination and control can be highlighted from several different perspectives (culture, budgets, steering goals etc.) meaning there are several different mechanisms that influence control in a complex organization as a hospital. Due to our research question, we have chosen to shed light on what we see as central mechanisms in coordinating activity between the two departments. We will give a short presentation of these, and how they are used together in coordinating the daily activity.

#### *Vertical coordination and control*

To strengthen vertical information between the management and the clinics, the CEO and the clinic manager make every year a written contract that includes a budget for the clinic. The clinic manager reports to the CEO on achievements of the contract once a year. Despite the good intentions within the contract to ensure communication and control between CEO and clinic managers, the contract does not seem to fulfill its intentions:

"What happens is that I get the contract from the department of Human Resources, based on last year contract. We then have to convert the DRG points to match this year predictions. We also include new things. The contract is more like an intention. Let's say that I fail to fulfill any of these requirements. It has to go very far for this to have any consequences for my job."  
(clinic manager 3)

The contract may be seen more as a common formality than a practical insurance for operational activity. One reason can be that the budget itself has a poor legitimacy when it comes to facilitate an accurate operational activity.

"When you open the budget and see that you do not have enough to cover the cost of the staff, and the finance department says 'go anyway'. On the first of January, five minutes past midnight. Then we know that the budget is going to be exceeded. It is not difficult to

understand that this is going to be negative even without us doing anything. This means we have been under-budgeted. "(Department manager nurses AN)

The budget and the financial systems are perceived as unfair by different managers at several levels in the hospital. The OS wants to increase their activity, but depends on AN services to be able to provide more surgeries. The differences in the finance system between the two clinics and the challenges it creates, keeps coming up in interviews with clinic managers at the two clinics. When AN says that they cannot increase their activity without exceeding the budget, it creates distrust among actors in OS due to a lack of activity measurability and transparency from the AN:

"We keep hearing anesthesia say: 'We cannot increase the activity'. It gets frustrating, and I think: OK, if you can't, why don't you prove it? "(Controller, orthopedic clinic)

The distrust to the anesthesia clinic seems to be supported by the hospital management:

"This is a word against words battle. The anesthesia clinic is alone against all those around them. I'm pretty confident that they have not done enough internally yet. But I cannot bring up something that I can show for, and say, look here! One would think that they would take the initiative to show proof of what they have done. Where is the proof? "(CFO)

"It's probably a perception in some clinics, and also with me, that they (anesthesia) are a bit slow ... There is a perception that anesthesia has not taken its share of cost reductions. At the same time, we do not have a good enough system to coordinate activity (CEO).

This is referring to the lack of transparency on how AN spends their resources. This shows that the transparency and accountability is harder when it is a service clinic then for a medical clinic. This indicates that clinics have poor insight in other clinics activity and resource allocation, as this clinic manager has stated:

"You know very little about what happens at the other centers and clinics. When you know little, it's easy to think: I'm being cheated" (Clinic manager, orthopedic clinic)

The formal vertical control mechanisms seem to create challenges for horizontal coordination of activity between two units at the hospital.

Lack of transparency and differences in finance systems have given rise to distrust to the formal systems, and given the clinic managers incentives to enter into their own internal trade arrangements:

"When it comes to the level above when we are assigned resources, it is nada communication. We discussed whether we should make agreements between us, leader agreements, like the agreements they do in business, similar to agreements for buying and selling services. If the planning does not become more interdisciplinary, we need to go more and more in that direction. That will involve more of internal billing or internal trade. But then we have to be allowed to run the store, on the store's terms. We cannot run a hybrid like it is today."(Clinic manager, anesthesia clinic)

It seems like this line of thinking is known by the CEO. However, he does not support these ideas:

"This is probably about a negotiating process. In an internal commercial reality, the anesthesia clinic would be commissioned to get their own revenue by selling their services. That is an approach to the problem. I'm not a fan of it "(CEO).

Lack of transparency and differences in funding and incentive systems are obvious challenges for cooperation between the two clinics.

#### *Horizontal Coordination and the role of social control*

At an operational level, the issues regarding the differences in the financial system for the two clinics do not seem to affect the outcome of the cooperation and coordination between the two departments. The solution seems to lie in the social control mechanisms that help to reduce the uncertainty associated with the financing systems.

One important formal horizontal coordination mechanism is the planning of activity that involves several clinics and departments. Both the AN and the orthopedic departments use an activity plan where the activity of the orthopedic department is well described and planned that facilitate cooperation between clinics involved in orthopedic surgeries. Although the clinic managers seem to have the impression that there is a lack of communication and transparency between the clinics in terms of the orthopedic surgery plan:

"We prepare activity plans that we send over to the anesthesia, but if they capture the details are not good to say" (clinic manager orthopedic clinic)

Even though the clinic managers believe the hierarchically separated clinics have a hard time to communicate and share information, when we asked at an operation level (department managers, section leaders etc, see table 2), every department managers are certain that they have good insight in the plan. The manager at the anesthesia department even proclaims that they contribute in the planning of this plan:

"I think that it cannot be that lack of communication. Nurses for each section are talking to each other. Whether they manage to run the operation rooms depends mostly of the nurses"(Department manager nurses AN)

The use of the orthopedic surgery plan to coordinate activities between the departments show the significant role planning have in coordinating medical services. It seems like AN is well informed about the resources needed by OS due to the "orthopedic surgery plan " that contains all the planned activity for the orthopedic department.

Another initiative from an operative level to cope with the differences caused by the separate hierarchy and the differences in the financial system is a meeting where the most important users of anesthesia services are invited:

"We have changed our strategy this year by inviting the other clinics for a meeting. Previously we got a phone call or an e-mail saying "we want you to operate one extra operating room" or "we will have open all summer in the operation rooms." It is very convenient for us to see that this is not possible, but maybe not for our partner standing there with pressure from patients who want to be operated" (Department manager nurses AN).

This meeting creates an opportunity to share information about the different budgets and to have insight in how the different departments are operating. Meetings between departments create opportunities to make agreements about internal trades. When we asked about internal trades between the departments, the department manager nurses AN answered:

"It is perhaps somewhat accepted that one cannot increase activity without involving anesthesia in the decision. Here we just pass the ball back, and tell them that if a clinic manager wants to have an extra surgery theatre in the middle of the year, we will manage to organize it, if he will pay what it costs: one and a half nursing position for each surgery theatre" (Department manager nurses AN).

It seems that both AN and OS seem to acknowledge the need for planning to get resources at hand when needed. AN is well informed about the resources needed by OS due to the orthopedic surgery plan and the information that are shared at this meetings between the departments. On the surgery theaters, good planning ensure a relatively permanent staff at the theaters. People often know the persons they are working with. Some of the leaders at the departments have also been around for a long while and some have also moved around at different clinics:

"I've been head of nurses on department for anesthesia in five years. And before that I was head nurse for the surgical ward. For many years there also"

"Section leader for anesthesia doctors and I have known each other a long time, for 24-25 years maybe. We actually went to the same Officer Candidate School for several years" (Section manager nurses AN on OS).

This indicates that many of the leaders at an operational level know each other which make it easier to communicate across levels and departments. The OS and the AN both have a person that acts as a section manager that operates as a coordinator associated with the planning of activity on the 8 operating theaters. These are nurses who have a shared responsibility for the operation of the theaters. To fulfill this responsibility, they have a joint office in direct relation to the operating rooms. Co-localization helps to strengthen the daily communication, and decisions can be made rapidly to ensure coordination of the theaters:

"The Operations rooms are located just inside the two doors. The section leader for the nurses from the anesthesia department and the orthopedic department sit in a shared office that is available for employees to drop in" (Department manager nurses OS)

The shared office helps the coordinators to get insight in the operative challenges for coordination between the departments:

"We do not have any planned meetings. We take things as they come up and talk continuously" (Section manager nurses AN on OS)

This co-localization and the rapid decision-making are made possible by the trust from the department managers to carry out operational decisions. When we asked the department manager of nurses on OS about the autonomy given to the coordinator to make operative decisions, she replied that she trust that the coordinator will do her job well. She also explained that she has the necessary

information to control the coordinators daily decisions, but she does not do it. This is how the coordinator experiences the trust from her formal manager:

“My manager got to just trust that I am doing what I should. She sees the result”  
(Section manager nurses OS)

Trust is an important mechanism to make the informal coordination go smooth on a daily basis. Due to trust, the managers at an operational level do not seem to need different control mechanisms to govern that the job is done in a satisfactory way. Trust may therefor create the necessary flexibility in a relationship that is hierarchically organized due to the need for strict bureaucratic control. As long as the coordinators do their job, the managers do not see the need to control what they are doing. The close relationship between the leader and the coordinator can to some degree explain the amount of trust between the actors. They talk daily with each other, and know each other well, and co-localization helps the daily communication. The good climate of cooperation across professions and departments seems strongly connected to a shared responsibility for the patients:

"It is the patient that is most important for everyone here. It is important that patients are satisfied. Everybody knows that when a patient comes to get his or her surgery at the hospital, the patient has taken time off from work and organized babysitting. We have to have very good reasons to skip the surgery just because the budget does not fit to this "  
(Section manager nurses AN on OS)

According to the coordinators at the two departments, the loyalty to the patients makes it easy to get employees to work overtime. Although anesthesia must exceed their budget, the use of overtime and the hiring of additional personnel are accepted when it is necessary for the care of the patient:

"It's a very collective spirit in that respect. And most people think of the patient, and like I said, we have operated a lot of patients. We operate more patients now than before. And we have, how many patients have we gotten through? We have operated nearly 300 patients on overtime this year" (Section manager nurses AN on OS)

Even though operating patient at overtime is a huge financial challenge for the budget founded AN, the accountability for the patients may appear to override the accountability to the budgets. The department managers at each department is the only one at an operational level that have financial accountability. They have to report on finance to the clinic manager. The department managers seem to spare the section managers for the financial accountability by holding the information about financial issues to them self. This enables a decoupling from financial issues at an operational level.

Earlier, we described how each year there is a verbal negotiation of the terms in the budget, and the CEO describes it as a “word against word – battle”. If the budget is not legitimized at a hospital and clinic level, it is no reason that they should at an operational level. The AN makes their operative decisions based on the need for medical services either this means that they will fulfill the frames set in the budgets or not.

### **Combination of formal and informal coordination mechanisms**

Even though it seems like the differences in funding systems at the hospital and clinic level create problems for interaction and coordination, some social and informal mechanisms at an operational level has managed to dampen the challenges caused by the differences in the finance systems. Informal coordination mechanisms as trust, strong professional identity, tight network and common goals about the patients welfare seem to help to compensate for the weaknesses in the financial system and the judgment of budgets as unfair. This indicates a strong role for the professions at the operational level to coordinate activity between the clinics, and the importance of trust between professionals at different departments. The amount of trust from department managers to coordinators makes rapid operational decisions possible. The lack of financial responsibility at an operational level makes a decoupling possible from focusing on budgets to focus on the accountability for the patients.

Our study shows that on an operational level, many different control mechanisms both formal and informal works together to cope for the weaknesses created in the financial system. Table 3 summarizes the most important mechanisms categorized into formal hierarchical mechanisms and informal social mechanisms

<b>Formal, hierarchical mechanisms</b>	<b>Informal, social mechanisms</b>
Orthopedic surgery plan	Employees with extensive experience
Activity data from operating theaters	Tight networks
Joint meeting with the "customers"	Common culture "us in the surgery theaters»
Internal Trading	Common goals
Organization of employees in regular teams	Accountability to the patient
Collocation	Medical professions
	Trust

**Table 3 Horizontal control mechanisms at an operational level**

## Discussion of the findings

Our research question is to describe how different control mechanisms contribute to horizontal coordination at the operational level between anesthesia and orthopedic surgery. We have described a broad package of control mechanisms that help drawing boundaries around the cooperation between the two departments at the operational level (see table 2). Despite the fact that the departments are facing quite different incentives through different funding system and evaluation regimes, these mechanisms contribute to well-coordinated services in the surgery theaters. This was a surprising finding, due to earlier studies indicating that horizontal control systems are not well implemented in Norwegian hospitals (Pettersen and Solstad 2013).

The theoretical discussion added some additional dimensions to the research question. How is the relationship between the various control mechanisms, and how is the relationship between the influence of managers (administrative controls), various groups within the organization (social controls) and individual characteristics (self-control). In this discussion we will highlight three findings that contribute to shed light on these issues.

### *Social controls appears to be particularly important*

We see that informal mechanisms such as culture, shared values and close networks between decision-makers are very important for coordination at the operational level. This is consistent with Cäker (2008), which emphasizes the importance of trust between the parties in coordination at this level.

Concern for the patients is an important mechanism that contributes to this common cultural development in the operating theaters. Staff from both departments talk of "us in the surgery theater," and according to the coordinators employees make no distinction on who works for AN or OS.

These social mechanisms work in relation with and are supported by several administrative mechanisms. Permanent staff of nurses and doctors from AN working at OS is probably an important precondition for the development of such a shared culture. Collocation means that coordinators have no need for formal meetings to coordinate activities. And hiring of experienced staff with tight networks within the hospital makes collaboration easier. Thus, we see how norms and values develop



between groups that cross organizational boundaries due to frequent interaction (Håkansson and Lind 2004).

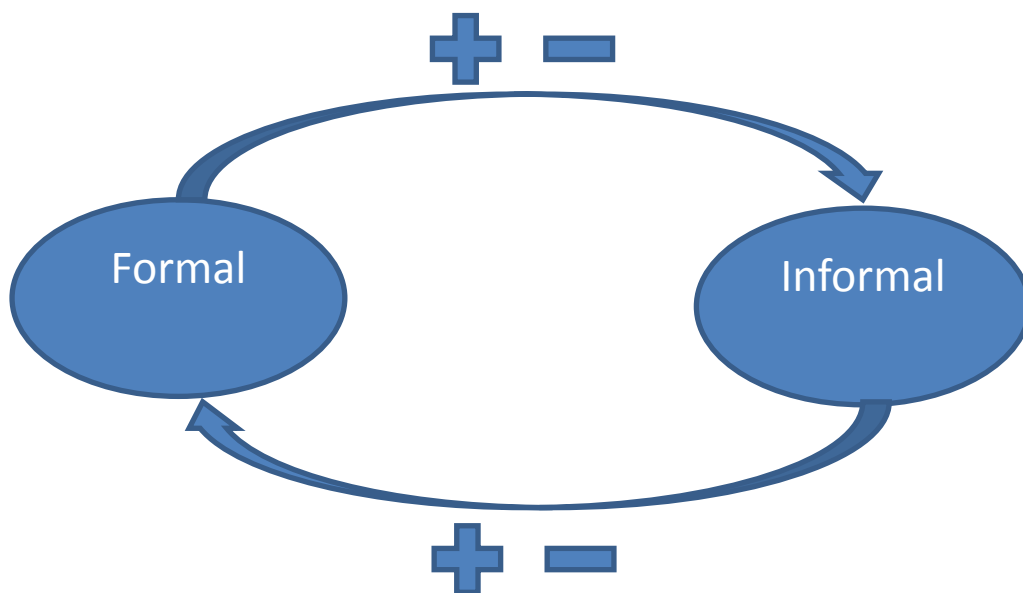
One important background for our study was the dilemma created by the different incentives facing the two departments through different funding systems, and the obvious demand for coordinated services. In the description of the context, we described how the funding systems and difficulties concerning lack of transparency between the departments, was causing a low level of trust between the clinical managers.

At operational level we find that the desire to do a good job for the patients in the surgery theaters is regarded as more important than the specific clinic objectives. The accountability to the patients may seem to outweigh accountability to the budget. This is in line with earlier findings (Albernethy 1996). However, accountability to the budget makes professionals at operational level negotiate on the financing of extra resources. Initiatives to internal trading at operational level imply a significant accountability for the budget situation.

#### *Social and formal controls seem to be closely related*

Formal and Social controls do not operate independently; formal controls allows for social controls to develop and vice versa. Collocation of the coordinators of AN and OS and organization of personnel from AN in regular team helps ensure frequent interaction between staff from the two departments - which contributes to the development of a common culture (Håkanson and Lind 2004). On the other hand, dense networks, loyalty to the patient and a common culture in the operating theaters facilitate agreements on internal trading and planning across organizational boundaries. These are examples of how formal and informal mechanisms seem complementary.

However, we also see cases where the various mechanisms work against each other. Separate budgets and the lack of a regular transference pricing system prevents a permanent increase of the capacity of AN although this is something the professionals in both departments want. And the managers implementation of budgetary control ( loose control) hampers the formal objective of budget balance.



**Fig xx Interaction between formal and informal controls**

*Vertical decoupling enables pragmatism and horizontal coupling*

We find that the control focus at operational level is largely horizontally oriented. This would hardly have been possible if not managers at this level, particularly coordinators of operating theaters, have been given sufficient decision space to make the decisions necessary to coordinate services. There is less focus on budgets, but a common culture of always doing what is best for the patient.

It seems that pragmatism is highly valued:

*".. We have professionals who work to the benefit of the patient, we let the rest be. You know how to do things; no one can overrule you "(Department Manager OS)*

Pragmatic solutions require loose control regarding the overall control system. This loose control occurs in our case at the department level. The department manager of AN withdraws the strict supervision of budget deficits or statistics of activity, on the contrary, she trusts the coordinators to have the necessary expertise to make the best decisions. The authority to hiring additional staff or to order overtime, is delegated to the coordinators. However, they have no responsibility to the budget. In this way, the operational level is protected from the formal control system. We can say that AN is vertically loosely controlled to allow for a horizontal collaboration with OS at operational level.

Earlier studies have described hospitals as loosely coupled organizations, and emphasized that such loose couplings are necessary to get the job done (Nyland and Pettersen 2004.....). We find that the department manager of AN serves more as a facilitator than as a strict controller, leaving to the coordinators to control operations according to the needs that arise in the operating theater. According to van der Meer-Kooistra and Scapens (2008) this is a typical feature of lateral relationships within an organization, the management system must have an adequate balance between strict control and flexibility to ensure good coordination.

### **Some concluding remarks**

Will be added...

**Få med at det er vanskelig å kategorisere mekanismene. Hva er formelle og uformelle? Henger så tett sammen... Hva er innflytelse fra leder/grupper/individ? F eks ser vi at avdelingsledere er både ledere, clanmedlem ( profesjon) og har individuelle karakteristikk og erfaring som har innflytelse over atferden på operasjonelt nivå.**

**Betydning av type aktivitet? Påvirker koblingen mellom mekanismene.**

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# Do hedge funds using high frequency trading give excess return compared to other hedge funds

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## Abstract

We test whether hedge funds using high frequency trading (HFT) strategies outperform other hedge funds and indices. We study a total of 540 funds, 380 after filtration, from Eurekahedge and the Hedge Fund Research Database stating that they are using HFT as part of or their main strategy. We study monthly data from 2000 to 2012 and compare their performance with market (MSCI World Index, S&P 500) and other hedge funds (Eurekahedge Hedge Fund Index Global and Hennessee Hedge Fund Index Global) as benchmarks. The findings suggest that HFT-funds does not provide an excess return compared to other hedge funds. HFT-funds have become an important part of financial markets, and although they do not provide excess return, they may nonetheless be needed in the market, as a supplier of liquidity and efficiency.

**Key words:** portfolio management, hedge funds, high frequency trading, performance, excess return

# 1 Introduction

## 1.1 Actualization

In the financial press there has been an increasing focus on use of high frequency trading and so called trading robots/computers. One of the biggest, and most recent, incidents that attracted the attention of the financial press was the flash crash in the U.S. May 6<sup>th</sup> 2010 when the Dow Jones Industrial Average dropped about 1000 points (9%) in a matter of minutes, just to recover most of the drop a few minutes later. This was due to several incidents occurring at the same time triggering withdrawal orders from several “computer trading robots” and creating a spiraling effect. The effect was increased by the fact that many market-making HFT robot withdrew from the market, drastically reducing liquidity in the market. In 2007 Goldman Sachs’ hedge fund, Global Equity Opportunities, got a \$3 billion add-on investment after it had lost about \$1.4 billion (28%) of its total assets in a matter of weeks. This was because their algorithm-based HFT-computer could not handle the unrest in the market (Bloomberg, 2007 and E24.no, 2007). After even more troubles the same hedge fund was shut down in January 2010 (Bloomberg, 2010). In 2012 and 2013 new rules have been applied by several of the big stock exchanges. June 1<sup>st</sup> 2012 Nasdaq induced an extra fee to try and reduce the number of trading robots manipulating the markets (E24.no, 2012).

The existing research on this topic has been focused on the impact this trading style has on the market, and not so much on the opportunities for investors. Therefore, we wish to test if hedge funds using HFT are really superior to other hedge funds. The hype on HFT has been big, but there has not been solid empirical evidence showing that HFT really is a superior investment opportunity. Hence, we wish to present empirical data on the return of hedge funds using HFT as their investing strategy, and to present results either in favor or against HFT. The problem statement that materializes is: *Do these hedge funds give a superior return compared to other hedge funds?*

## 2 Hedge Funds and Computerized Trading

### 2.1 Hedge Funds

Hedge funds are typically organized as limited partnerships, with the investors as limited partners and the managers as general partners. Managers of hedge funds often invest a



significant portion of their personal wealth to ensure the alignment of economic interests among the partners. The major problem with defining a hedge fund is that they are normally not required to register with financial regulatory boards in their representative countries.

According to the U.S. Securities and Exchange Commission's (SEC) Investor Bulletin on hedge funds one can say the following: *"Like mutual funds, hedge funds pool investors' money and invest those funds in financial instruments in an effort to make a positive return. However, unlike mutual funds, hedge funds are not registered with the SEC. This means that hedge funds are subject to very few regulatory controls....Because of this lack of regulatory oversight, hedge funds historically have been available to accredited investors and large institutions, and have limited their investors through high investment minimums (e.g., \$1 million). Many hedge funds seek to profit in all kinds of markets by pursuing leveraging and other speculative investment practices that may increase the risk of investment loss."* (SEC, 2012)

Another statement, also taken from the SEC, a testimony from Donaldson, the Chairman of the SEC, provide some insight: *"The term 'hedge fund' is undefined, including in the federal securities laws. Indeed, there is no commonly accepted universal meaning. As hedge funds have gained stature and prominence, though, 'hedge fund' has developed into a catch-all classification for many unregistered privately managed pools of capital. These pools of capital may or may not utilize the sophisticated hedging and arbitrage strategies that traditional hedge funds employ, and many appear to engage in relatively simple equity strategies. Basically, many 'hedge funds' are not actually hedged, and the term has become a misnomer in many cases."* (Donaldson, 2003)

Due the private nature of hedge funds, they have fewer restrictions than regular mutual funds. There are no restrictions on the use of leverage, short-selling and derivatives, and this allows them to follow significantly different investment strategies. Hedge funds are not an asset class by itself, but more an alternative investment vehicle just like real estate and private equity. Nevertheless, hedge funds are subject to antifraud provisions of the federal securities laws. (Hennessee Group, 2012)

Market efficiency

Some comment with reference to Fama (1970)...

## 2.2 Algorithmic Trading

Algorithmic trading is defined as “*electronic trading whose parameters are determined by strict adherence to a predetermined set of rules aimed at delivering specific execution outcomes.*” (Chlistalla, Speyer, Kaiser, & Mayer, 2011, p. 3)

Trading algorithms have continuously evolved to what is known as third-generation algorithms, which include intelligent logic that learns from market activity and adjusts the trading strategy of the order based on what the algorithm perceives is happening in the market. (Chlistalla et al., 2011)

There is a wide variety of trading algorithms, but if we remove the customizations of algorithms, we see that there is a small number of core strategies used. Johnson (2010) defines these three main categories for algorithms: Impact-driven, cost-driven and opportunistic.

An impact-driven algorithm tries to minimize the overall market impact. These algorithms try to reduce the effect trading has on the asset price. Impact-driven algorithms evolved from simple order-slicing strategies. By splitting large orders into smaller orders, they try to reduce the impact on asset prices and the overall market impact. (Cesari, Marzo, & Zagaglia, 2012)

Cost-driven algorithms try to reduce the overall transaction costs. A transaction has more costs than just commission and spread, we also have to take into account the implicit costs such as market impact and timing risk to find the overall cost. The market impact can be minimized by splitting the trade into smaller orders and spreading them over time, but this exposes us for a greater timing risk. Therefore a cost-driven algorithm tries to minimize the transaction costs by finding a balance between market impact and the overall exposure to timing risk. (Johnson, 2010) (Perold, 1988)

Opportunistic algorithms have evolved from a range of trading strategies. They all take advantage of favorable market conditions, using real-time information to actively search for optimal times to execute the trade, whether this is based on price, liquidity or other factors. (Yang & Jiu, 2006)

There are several types, like Price inline algorithms (PI) (Johnsen, 2010), liquidity-driven algorithms and pairs trading (Elliott, Hoek, & Malcolm, 2005, p. 271) (Whistler, 2004). (Kaufman, 2011)..

The trading algorithms mentioned above are strategies that can be applied to any asset class. Still there are some algorithms based on the unique properties of certain classes. As algorithmic trading continues to expand outside the equities market, more of these asset-class specialized strategies will be developed. One type of asset-class specific trading algorithm is the Multi-leg algorithm. Trading strategies for bonds, futures and options often involves multiple legs. Each leg represents an order of a specific asset, which might be as simple as a two-way spread trade. They may have three or four legs as well, or in some cases even more complex. Another developing area is volatility-driven algorithms. Derivatives are contracts based on underlying assets, price movements in the underlying factor are then important. The price of a derivative contract is not only affected by the price of the underlying asset, but also by the interest rate and its volatility estimates. Algorithms that can take all this into account have therefore been developed. (Johnson, 2010)

### **2.3 High Frequency Trading**

According to Gomber et al. (2011) the term High Frequency Trading has emerged in the last five to six years. High-Frequency Trading (HFT) has become a collective term for many different strategies regarding purchase and sale of financial assets. It should be noted that HFT is not a strategy itself, but rather a collective term for different high-speed strategies. What these strategies have in common is that they are carried out frequently and fast; HFT strategies may carry out several thousand transactions per second. To make this possible traders use computers programmed with trading-algorithms. These algorithms gather and analyze market data at an incredible pace, before acting in the market. It is crucial that the computers acts fast, since the opportunity to trade may only exist in a fraction of a second. These trades are often repeated and may lead to a total of several million trades per day. The gains from each trade are often only pennies, but do enough of these trades in a day, and you gain a pretty nice profit, according to the theory.

The majority of HFT-based strategies can be separated into market making strategies, statistical arbitrage strategies and liquidity detection strategies. Market making strategies

mimic the traditional role of market makers; placing quotes on both the buy and sell sides attempting to profit by earning the bid-ask spread (Chlistalla et al. (2011) and Guo (2012)). This strategy will typically provide liquidity to the market, but the risk of electronic market makers is that they have no formal market making obligation, so they can withdraw from the market when they want. This is what happened during the previous mentioned flash crash, where several of the major HFTs withdrew from the market reducing the liquidity drastically. Chaboud, Alain, Hjalmarsson, Vega & Chiquoine (2009) also found that high frequency trades are more correlated than human trades.

Statistical arbitrage strategies seek to correlate prices between securities and to profit from imbalance in those correlations. The range of this strategy is wide and can be arbitrated between cross-border or domestic marketplaces, arbitrage between derivatives and its underlying assets or arbitrage between various forms of tradeable indexes. These strategies increase market efficiency and reduce volatility, but HFT increases asymmetric information. The increase of asymmetric information is a result of the difference in response-time between HFT and other slower traditional traders (Brogaard, Hendershott, & Riordan, 2012).

HFT strategies can involve more nefarious methods also referred to as “the darker arts” of HFT. When using a market maker strategy the trader can manipulate the market by quote stuffing. *“Quote stuffing is a practice in which a large number of orders to buy or sell securities are placed and then canceled almost immediately.”* (Egginton, Van Ness, & Van Ness, 2012, p. 3). This impairs the visibility of the market for slow traders giving high-frequency traders the possibility of executing profitable trades at a slow trader’s expense. One way of doing this is known as the smoking strategy. The basic idea of a smoking strategy is for the high frequency trader to place alluring ask-quotes to attract market bids from slower players in the market, then right before the market bids reaches the market, the high-frequency trader cancels the lure quotes. Resulting in the slow buyer’s bid hitting a larger ask-price. Almost the opposite of the smoking strategy is the spoofing strategy. The idea is that the high-frequency trader places a large limit sell order above the best ask price, while at the same time placing a limit buy inside the quotes. The limit order appears as selling pressure alluring naïve investors to sell, lowering the price down to the high-frequency traders’ previously placed bid (Guo, 2012).

Today the HFT market-share range from 40-70% for the U.S. market and 19-40% for the European market (Gomber et al. (2011)).

### 3 Risk and Performance Measures

Risk is commonly looked upon as the total volatility in the possible return of an investment. One usual way to measure risk with regard to volatility is by using the standard deviation of the rate of return. For the greater part of this section on portfolio ratios we will build on Markowitz' mean-variance paradigm, saying that the mean and standard deviation of the distribution of one-period return are sufficient statistics for evaluating the prospects of an investment portfolio. (Markowitz, 1952)

#### 3.1 Sharpe Ratio

The importance of the trade-off between reward (the risk premium) and risk (as measured by standard deviation) suggests that we measure the attraction of an investment by the ratio of its risk premium to the standard deviation of its excess returns. This reward-to-volatility measure is widely used to evaluate the performance of investment managers:

$$(3.1) \quad \text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_p}$$

, where  $R_p$  is the expected portfolio return,  $R_f$  is the risk free rate, and  $\sigma_p$  is the standard deviation of the portfolio.  $R_p - R_f$  is also known as the differential return. In this version, the ratio indicates the expected differential return per unit of risk associated with said differential return.

#### 3.2 Treynor's Measure

Like Sharpe's ratio, Treynor's measure gives the excess return per unit of risk, but instead of total risk it uses systematic risk. The advantage of using both Sharpe and Treynor together when rating funds is that you get a measure of both the total risk and the systematic risk of the investment. Treynor's Measure is defined as:

$$(3.2) \quad T = \frac{(\bar{r}_p - \bar{r}_f)}{\beta_p}$$

, where  $\bar{r}_p$  is the average return of the portfolio,  $\bar{r}_f$  the average risk free rate and  $\beta_p$  the beta (the impact of the systematic risk) of the portfolio. It is important to remember that like the Sharpe ratio, Treynor's measure does not quantify added value of a portfolio, it is purely a ranking criterion (Friend & Blume, 1970).

### 3.3 Jensens Alpha

An alternative method of ranking portfolio management is Jensen's alpha, which in contrast to the Sharpe Ratio and Treynor's Measure, is based on market indices. Jensen's Alpha quantifies the added return as the excess return above the security market line in the capital asset pricing model. In Jensen's Alpha the rankings are based on systematic risk alone. The portfolios alpha, or Jensen's alpha, can be expressed as:

$$(3.3) \quad \text{Jensen's Alpha} = \bar{r}_p - [\bar{r}_f + \beta_p(\bar{r}_M - \bar{r}_f)]$$

, where  $\bar{r}_p$  is the average return of the portfolio,  $\bar{r}_f$  the average risk free rate,  $\beta_p$  the portfolios beta and  $\bar{r}_M$  the average market return. (Jensen, 1969)

### 3.4 Tracking Error

Tracking error is used to measure how closely a given portfolio follows the benchmark it is trying to replicate. As with the Sharpe Ratio, tracking error is both measured with the use of ex post data and ex ante data. Ex ante data is used by portfolio managers to control risk, while ex post data is useful for performance ratings. Tracking error is defined as:

$$(3.4) \quad TE = \sqrt{\frac{1}{T-1} \sum_{t=1}^T (e_t - \bar{e})^2}$$

, where T is the number of observations,  $e_t$  is the portfolios abnormal return over a given benchmark for period t and  $\bar{e}$  the portfolios average (arithmetic) abnormal return over the given benchmark for the period t (Morningstar (2012) and Goodwin (1998)). This way of calculating tracking error is called the standard deviation of the active returns.

### 3.5 Information Ratio

Information Ratio (sometimes referred to as Appraisal Ratio) is a risk adjusted ratio that tells us how much abnormal return a fund manager/fund has contributed to, given the amount of

active risk taken (the Tracking Error). The information ratio based on historical data is simply the ratio of the return and standard deviation:

$$(3.5) \quad IR = \frac{\overline{ER}}{\hat{\sigma}_{ER}}$$

, where  $\overline{ER}$  is the arithmetic average of excess returns over the historical period from  $t=1$  through  $T$  ( $\overline{ER} = \frac{1}{T} \sum_{t=1}^T ER_t$ , and  $ER_t = R_{Pt} - R_{Bt}$  where  $ER_t$  is the excess return of the portfolio over the benchmark) and  $\hat{\sigma}_{ER}$  is the equivalent tracking error (see equation 7.9).

### 3.6 Sortino Ratio

In the ratios mentioned above, standard deviation is the most used measure of risk, however, in modern portfolio theory this measure is questioned on theoretical, practical, and empirical grounds (Estrada, 2006). The standard deviation treats an x% fluctuation above and below the mean in the same way, something a rational investor would not agree to; a fluctuation below the mean is less desirable than a fluctuation above the mean. Furthermore, beta is also used as a measure of risk (systematic risk), most importantly in the CAPM. According to Estrada (2006) beta has weaknesses similar to those of standard deviation. An asset that goes up substantially more than the market when the market goes up, but does not go down more than the market when the market falls, can have a high beta, although it is clearly a good investment.

$$(3.6) \quad \text{Sortino ratio} = \frac{E_{[r]} - r_{mar}}{\delta_{mar}}$$

, where  $E_{[r]}$  is the asset or portfolios expected return,  $r_{mar}$  the minimal acceptable rate of return (which can be a benchmark return), and  $\delta_{mar}$  the portfolios downside deviation with respect to the MAR.  $\delta_{mar}$  can be defined as the semideviation with respect to  $r_{mar}$ :

$$(3.7) \quad \delta_{mar} = \sqrt{\frac{1}{T} * \sum_{t=1}^T \{ \text{Min}(E_{[r]} - r_{mar}, 0) \}^2 E(r_i)}$$

$$= r_f + \beta_i [E(r_M) - r_f]$$

, where  $t$  indexes time, and  $T$  denotes the number of observations (Sortino & Price (1994), Estrada (2006), and Plantinga, Van der Meer & Sortino (2001)). The Sortino ratio represent the latest addition to the modern portfolio theory, often called the post-modern portfolio theory.

## 4 Methodology

### 4.1 Data

The data we have used is mainly gathered from the Hedge Fund Research Database (see [www.hedgefundresearch.com](http://www.hedgefundresearch.com)). *“The licensed/redistributed HFR Database, **currently comprised of over 7000 funds and fund of funds**, is available to all accredited investors. Information on our hedge fund universe of established and emerging managers is collected directly from the fund managers and/or their respective offshore administrators, while other pertinent information is culled from offering memoranda, onsite visits, and due diligence interviews.*

*HFR Database is the foundation for the HFRI Indices, the industry's most widely utilized benchmark of hedge fund performance information. The HFRI Fund Weighted Composite alone is comprised of over 2200 funds from our database universe.”* (Hedge Fund Research, Inc., 2013)

Furthermore we also collected information from EurekaHedge (see [www.eurekahedge.com](http://www.eurekahedge.com)). This was just a small sample of 38 funds.

*“EurekaHedge is the world's largest alternative investment funds research house, specializing in hedge fund databases. Maintaining a hedge fund list of 27583 funds, across all strategies and asset classes, EurekaHedge delivers market-leading hedge fund analysis along with the most accurate hedge fund information on the market, tailored to investors' needs.”*  
(EurekaHedge Pte Ltd., 2013)

In addition to data on individual hedge funds, we have also collected data on hedge fund-indices and other indices, such as EurekaHedge Hedge Fund Index Global, Hennessee Hedge Fund Index Global, S&P 500 Composite and MSCI World Index (our market index). This is done by the use of Thompson Reuters' Datastream.



**4.1.1 Database**

The selection of a database or sample of hedge funds may be subject to a performance bias. Almost all databases differ from one another (Fung & Hsieh, 2004). This is also shown by the performance-difference between the indices of the three databases we have gathered (Eurekahedge, Hennessee and HFR). Due to the fact that it is both very difficult and often expensive to get access to performance data in the hedge fund industry, we have been subject to the matter of cost. This does not mean that we have chosen the cheapest database for collection of data, but rather a weighted evaluation of cost, access possibilities and quality. The database we have gained access to, the HFR Database, has often been used in research. It is a highly reputed, and accepted, database for hedge fund research.

**4.1.2 Hedge Funds**

As mentioned, hedge funds are not an asset class, but rather an alternative investment vehicle. Referring to our research questions, we are looking for hedge funds using HFT and algorithmic trading. There exist, however, not a general accepted classification of the different strategies used by hedge funds. We are therefore subject to the classification set by the hedge funds themselves, and furthermore the classification set by the database we are using (in this case the HFR database and Eurekahedge). To do this we need to extract the funds stating that HFT is part of, or their main strategy. The data obtained from Eurekahedge consists only of hedge funds stating that they are using HFT as their main strategy (we call this classification “Black Box”). In the HFR-database we chose three strategy-categories to form our dataset: Equity market neutral, Quantitative Directional and Active Trading (see Appendix 1 – HFR Fund Strategies for complete description of each strategy-category). We then ended with a total of 502 funds (from a total of about 7000 in the database), belonging to these categories. Thus we came up with a total dataset consisting of about 540 different funds (HFR-database and Eurekahedge). For the funds we chose the management fees had an average of:

Management fee	1.56 %
Incentive fee	18.40 %

**Table 4-1: Average annual fees HFT-funds.**

Due to the fact that we are comparing HFT-funds with other hedge funds our return data will not be adjusted with regards to management and incentive fees (the average of the total database is very similar, respectively 1.5% and 15.20%).

## **4.2 Data Biases**

Hedge Funds are not required to publicly disclose their activities. hedge funds who join a database do this for selfish reasons. Joining a database is a way of marketing a hedge fund, especially since advertising for hedge funds is strictly regulated in most of the world. Therefore, before using data from hedge fund databases, we must consider the well-documented biases in the data (See Ackerman, McEnally, and Ravenscraft (1999), Liang (2000), Fung and Hsieh (2000), Fung and Hsieh (2002), Fung and Hsieh (2004) and Jagannathan, Malakhov and Novikov (2010)).

### **4.2.1 Selection Bias**

As mentioned above, hedge funds are not required to report their activities to the public. The hedge fund managers decide for themselves what information to publicly disclose, and therefore need incentives to join a database. Exposure to potential investors might be the incentive they need to reveal their activities. As a result, hedge funds deciding to join a database are likely to have different characteristics and performance than hedge funds not joining, and therefore the database will not be a representative sample of the total population of hedge funds. For example the most successful and least successful hedge funds are not likely to join such databases, since the most successful hedge funds will have no problem acquiring capital and the least successful hedge funds have no reason to advertise their disappointing results. Well performing unknown hedge funds are most likely to join databases. This is a difficult bias to circumvent but should rather be considered when interpreting data made from hedge funds.

### **4.2.2 Survivorship Bias**

Some hedge fund databases only provide information on operating funds and funds that have ceased operation are purged from the database. This results in a survivorship bias since the surviving funds normally perform better than dead funds. Normally, hedge funds that have ceased operation did not perform as well as the hedge funds still operating. This resulting survivorship bias may cause the analysis to overstate historic performance and reduce the historic risk.

The HFR database we used does not remove funds that have ceased their operation; therefore we do not have to take this into account.

### 4.2.3 Backfill Bias/ Incubation Bias

Backfill bias arises when a hedge fund's prior history is included when joining a database. Many new funds start with an incubation period, if they perform well they join a database seeking new investors. If their performance is "bad" they cease operation. Therefore, when databases backfill funds' performance this will result in an upward biased average return.

The HFR database allows hedge funds to backfill their performance history, but they provide the date that hedge funds joined the database. To circumvent this bias we have used these dates and removed all performance data prior to the date the fund joined the database.

### 4.2.4 Sampling Differences

Sampling difference exists among various hedge fund databases. Hedge funds normally report to one or two databases, but not all. As a result there will be some difference in the performance of the different samples (as mentioned by Fung and Hsieh, 2004). This bias is impossible for us to circumvent, taken into account that we only have access to the academic version of the HFR-database where all fund identifying information is removed. This too will have to be taken into account when we analyze our findings.

### 4.2.5 Illiquid Assets

The return data of hedge funds is often highly serially correlated. According to Getmansky, Lo and Makarov (2004) exposure to illiquid assets and smoothed returns is the reason for this. Getmansky et. al. (2004) also found that the level of autocorrelation between the different hedge fund- style categories varied significantly. The reason for this is that trading in illiquid assets is a requirement for smoothed returns to be possible. Therefore, hedge fund-styles trading with a lot of illiquid assets will be more exposed to autocorrelation. *"Of course, for securities more easily traded and with deeper markets, mark-to-market prices are more readily available, extrapolated marks are not necessary, and serial correlation is therefore less of an issue. But for securities that are thinly traded, or not traded at all for extended periods of time, marking them to market is often an expensive and time-consuming procedure that cannot easily be performed frequently. Therefore, we argue in this paper that serial correlation serves as a proxy for a fund's liquidity exposure."* (Getmansky, Lo, & Makarov, 2004, p. 545)

The hedge funds we study do frequent trading in highly liquid assets, as a result we should not find evidence of strong autocorrelation in our dataset. *"Finally, a more prosaic channel*

*by which serial correlation can arise in the reported returns of hedge funds is through ‘performance smoothing’, which is the unsavory practice of reporting only part of the gains in months when a fund has positive returns so as to partially offset potential future losses and thereby reduce volatility and improve risk-adjusted performance measures such as the Sharpe ratio. For funds containing liquid securities easily marked to market, performance smoothing is more difficult and, as a result, less of a concern. Indeed, it is only for portfolios of illiquid securities that managers and brokers have any discretion in marking their positions.”*

(Getmansky, Lo, & Makarov, 2004, p. 545)

## **5 Analysis**

As mentioned above we have in our analysis compared our HFT-database funds with a selection of benchmarks, both hedge fund benchmarks (Hennessee, Eurekahedge) and market benchmarks (S&P 500, MSCI World).

### **5.1 Limitations**

The limitations we have set are the following:

- We set the timeframe to monthly returns within January 2000 – December 2012. This we did because the main section of the funds did not have observations before this date (HFT is a relatively new trading-strategy (Gomber et al., 2011), so to find hedge funds saying they used HFT before this would only mean that they have changed their strategy and kept the return information for the old strategies). We used the same timeframe for our benchmarks.
- We set the minimum number of observations to 12, to be able to compute reliable ratios and variance measures (with few observations variance, and especially semivariance, is often very low and several of our ratios did not comply with a variance or semivariance of zero). Meaning we deleted all the funds that did not comply with this assumption.
- Our world market in this paper is set to the MSCI World Index, which also the active returns of the funds are measured against.
- Our “risk-free rate” is set to the monthly average of the 3mth T-bill rate within our timeframe.

## 5.2 Descriptive statistics

We have used the simple CAPM model to extract residuals to be able to test our sample for different types of bias. To show how we tested our sample, we will use an illustrative example to show how the calculations and tests for one fund are done and then we will present a summary of the rest of the funds. The sample fund we use is fund 259 (given our anonymized database, funds have only numbers for distinguishing reasons) from the academic version of the HFR database.

First we have a summary of the statistics of fund 259 (Table 7-1). The sample mean is very small, only 0.40%, and the sample standard deviation is much larger indicating some extreme values. Absence of skewness and kurtosis is strongly rejected, leading to a strong rejection of normality.

```

Statistics on Series fund259
Monthly Data From 2000:01 To 2012:12
Observations          156
Sample Mean           0.004025      Variance              0.000205
Standard Error        0.014314      SE of Sample Mean    0.001146
t-Statistic (Mean=0)  3.512373      Signif Level (Mean=0) 0.000582
Skewness              -0.786709     Signif Level (Sk=0)  0.000071
Kurtosis (excess)    3.226682     Signif Level (Ku=0)  0.000000
Jarque-Bera          83.766280     Signif Level (JB=0)  0.000000
  
```

**Table 5-1: Statistics on fund 259**

The following Table 7-2 shows the output from the linear regression. The significance level of regression F is smaller than 0.05 and the coefficient estimates are also statistically significant, but  $R^2$  is not very high.

Strategy	#	Percentage of normal distribution
Equity Market Neutral	91	43.128 %
Quantitative Directional	47	49.474 %
Active Trading	19	40.426 %
Black Box	14	41.180 %
Total	157	40.464 %

**Table 5-2: Normal distribution funds.**

The following Table 7-3 shows the output from the linear regression. The significance level of regression F is smaller than 0.05 and the coefficient estimates are also statistically significant, but  $R^2$  is not very high.

```

Linear Regression - Estimation by Least Squares
Dependent Variable exfund259
Monthly Data From 2000:01 To 2012:12
Usable Observations                156
Degrees of Freedom                  154
Centered R^2                       0.0140665
R-Bar^2                            0.0076643
Uncentered R^2                     0.0867536
Mean of Dependent Variable         -0.004025425
Std Error of Dependent Variable    0.014314407
Standard Error of Estimate         0.014259446
Sum of Squared Residuals           0.0313130984
Regression F(1,154)                7.1971
Significance Level of F            0.0403103
Log Likelihood                     442.7044
Durbin-Watson Statistic            1.6581

```

Variable	Coeff	Std Error	T-Stat	Signif
1. Constant	-0.004216971	0.001148959	-3.67025	0.00033349
2. EXMSCI	0.032425898	0.011875752	2.73043	0.00324503

**Table 5-3: Linear regression fund 259**

### 5.2.1 Heteroscedasticity

The output from White's test (table 7-4) shows that homoscedasticity cannot be rejected in the case of fund 259, since the P-value > 0.05. Therefore we can conclude that heteroscedasticity is not a serious problem for this particular fund.

```

White Heteroscedasticity Test
Chi-Squared(2)= 1.622784 with Significance Level 0.44423916

```

**Table 5-4: White's-test fund 259**

Strategy	#	Percentage of Heteroscedasticity
Equity Market Neutral	47	22.275 %
Quantitative Directional	29	30.526 %
Active Trading	14	29.787 %
Black Box	2	5.882 %
Total	90	23.196 %

**Table 5-5: Heteroscedasticity in residuals.**

Table 7-4 shows the White's test we have done in Rats individually for all HFT-funds. Table 7-5 shows the amount of funds that have heteroscedasticity in the residuals. As mentioned in chapter 6, if we detect heteroscedasticity our estimator will not be BLUE. Therefore, we now have to take into account that for about 30% of our funds, we cannot be sure that our estimator has the lowest possible variance.

## 5.2.2 Normality

Using the same residuals we tested the residuals concerning normally distributed. Financial data does often violate this assumption, but as long as the other four assumptions are met and the sample size are sufficiently large violation of the normality assumption is virtually inconsequential. An example of the Jarque-Bera test and its belonging statistics are presented in Table 7-6.

```

Statistics on Series RESIDS
Monthly Data From 2000:01 To 2012:12
Observations          156
Sample Mean           0.000000      Variance           0.000202
Standard Error        0.014213      SE of Sample Mean  0.001138
t-Statistic (Mean=0)  0.000000      Signif Level (Mean=0)  1.000000
Skewness              -0.882204     Signif Level (Sk=0)   0.000008
Kurtosis (excess)    3.910849     Signif Level (Ku=0)   0.000000
Jarque-Bera          119.651186    Signif Level (JB=0)   0.000000

```

**Table 5-6: Normality statistics of residuals fund 259**

The Jarque-Bera test is strongly rejecting normality (sign. level < 0.05) for fund 259. For a summarized table of the results from the Jarque-Bera tests see Appendix 3.

A: Strategy	#	Percentage of normal distribution
Equity Market Neutral	81	38.39 %
Quantitative Directional	37	38.95 %
Active Trading	15	31.92 %
Black Box	14	41.18 %
Total	147	38.68 %

**Table 5-7: Normal distribution in residuals.**

We found that about 39% of our HFT hedge funds have normally distributed residuals. This is a bit surprising as theory suggests that financial data are not normally distributed.

## 5.2.3 Autocorrelation

As mentioned hedge fund returns frequently exhibit strong degree of autocorrelation. Getmansky et. al. (2004) found that this was a result of expose to illiquid assets and performance smoothing by hedge fund managers. They also found that the level of autocorrelation varied significantly between different hedge fund styles. Their explanation for this was that the different hedge funds styles traded in different asset classes, and it was easier for hedge funds trading in illiquid assets to smooth their performance. As a result, the more illiquid assets the hedge funds traded in, the more autocorrelated were the returns. Since we

have selected hedge funds stating that they use HFT we should not find strong degree of autocorrelation.

We used the residuals extracted from the CAPM, individually testing each of our 380 hedge funds for autocorrelation. Following is a sample of the output from the Ljung-Box test we ran to test our hedge funds for autocorrelation. We used twelve lags and as we can see for this particular hedge fund we reject the null hypothesis (Sig. level < 0.05) that all 12 autocorrelation coefficients are equal to zero, and conclude that there is autocorrelation in the residuals.

```

Correlations of Series %RESIDS
Monthly Data From 2000:01 To 2012:12

Autocorrelations
 1          2          3          4          5          6          7          8          9          10
 0.08390    0.14771    0.15605    0.33216    0.03144    0.08044    0.07735    0.16513    0.04156    0.01702
 11         12
-0.01949    0.02616

Ljung-Box Q-Statistics
  Lags  Statistic Signif Lvl
    12    33.701    0.000752

```

**Table 5-8: Result Ljung-Box test fund 259**

Out of the 380 hedge funds tested for autocorrelation we could not reject the possibility of autocorrelation in the residuals for 167 of the hedge funds (table 7-9). This is equal to about 44% of the hedge funds. For a summarized table of the results from the Ljung-Box tests see Appendix 3.

A: Strategy	#	Percentage of autocorrelation
Equity Market Neutral	105	49.76 %
Quantitative Directional	45	47.39 %
Active Trading	17	36.17 %
Black Box	0	0.00 %
Total	167	43.95 %

**Table 5-9: Autocorrelation within different strategy styles**

## 5.2.4 Implications of autocorrelation in our thesis

Now that we have found autocorrelation in some of our hedge fund data we need to consider the implication this have on our study and how to deal with it. As mentioned we cannot expect autocorrelation in our data to be a result of illiquid assets and performance smoothing. Getmansky et. al. (2004) discussed other sources of autocorrelation, the most common ones are: market inefficiencies, time-varying expected returns, time-varying leverage and incentive



fees with high water marks. Although, due to the fact that reporting standards for hedge funds are nonexistent and the HFR database only provide limited information on trading style we cannot fully rule out the possibility of performance smoothing as a source of autocorrelation.

Fung and Hsieh (2001), Brooks and Kat (2001), and Agarwal and Naik (2004) demonstrate that autocorrelation invalidates standard mean-variance analysis for hedge funds. Getmansky et al. (2004) based on a moving average representation of reported returns show how this process affects the Sharpe ratio and beta in a standard single index market model. As the smoothing lowers the variance of the returns and the covariance (with the market index), but leaves the mean unaffected, the standard risk measures tend to underestimate the actual risk. Cesare, Stork and de Vires (2011) built on this and developed more performance ratios adjusting for autocorrelation. They also found that traditional performance measures overvaluated the performance of hedge funds because they undervalue the risk level of the hedge funds. Another study by Gallais-Hamonno & Nguyen-Thi-Thanh (2007) also found that unsmoothing returns increased the risk level of hedge funds and decreased performance measures of traditional ratios by an average of 20%. The common denominator in all of these studies is that the ratios will be biased upward when return data are subject to autocorrelation.

### 5.3 Risk and return

The first parameter we wish to analyze is the risk and return of the funds and the benchmarks. As we mentioned the most common way of measuring risk is by the use of variance/standard deviation, but a better way of measuring risk might be by the use of semivariance and a given threshold (risk-free rate, benchmark return, etc.). To start with we checked how the parameters changed with regard to the age of the funds.

Age	Monthly values			# of funds
	Return	St. Dev.	Semivar.	
1<=-3 years	0.31 %	2.73 %	0.0086 %	151
3<=-5 years	0.42 %	2.60 %	0.0091 %	84
>=5 years	0.46 %	3.59 %	0.0497 %	145

**Table 5-10: Average monthly return, standard deviation and semivariance based on age**

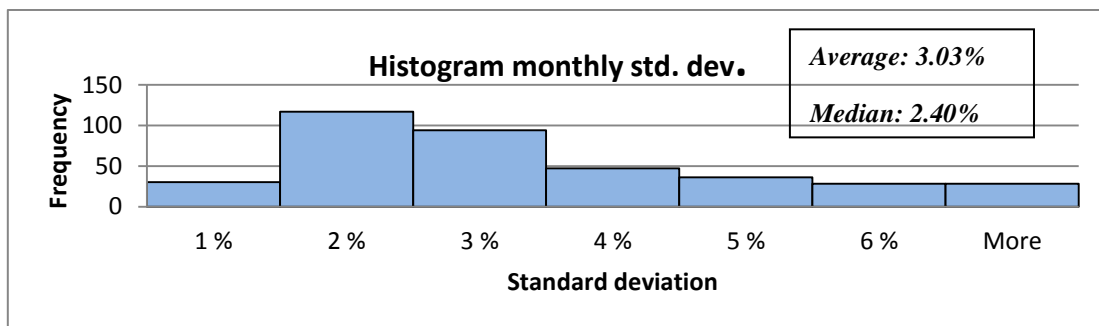
As we see, both risk and return increases as age increases. Except from the risk of funds aged 3-5 years being lower than 1-3 years, we see no surprising results. Furthermore we also see that the distribution of age among the HFT-funds is more or less even.

	Return	St. Dev.	# of funds
HFT-funds	0.39 %	3.03 %	379
All funds	0.70 %	4.46 %	6937

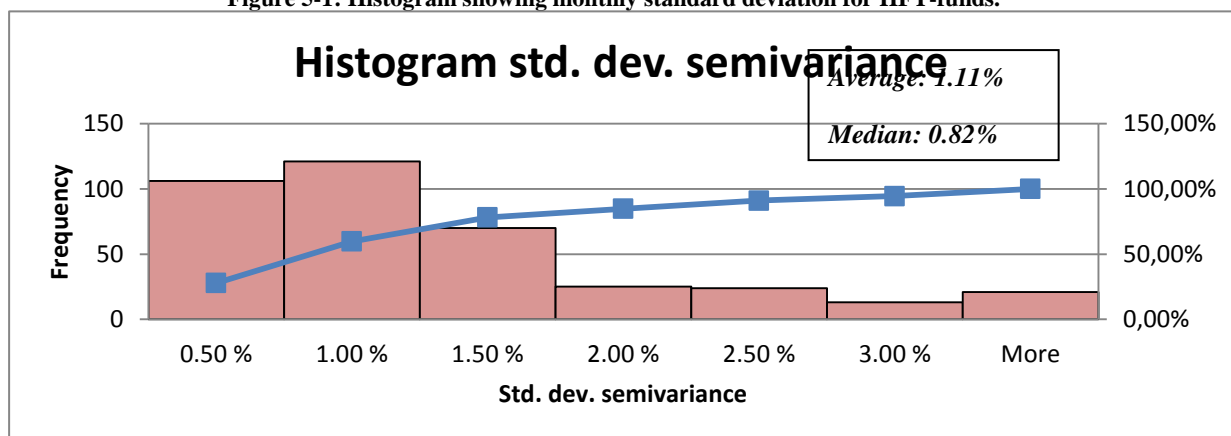
**Table 5-11: HFT-funds vs. all hedge funds.**

After analyzing the distribution of risk and return we compared the risk and return of the HFT-funds with the risk and return of the rest of the hedge funds in the HFR database. This is shown in table 7-9.

If we take a look at the distribution of the risk measures we see that the monthly standard deviation (Figure 7-1) has an average of 3.03%, while the majority is between 2% and 4% (about 76% of the funds). If we take a look at the standard deviance to the semivariance (Figure 7-2) on the other hand, we see that this is lower with an average of 1.11%, with 80% of the funds less than 2%.



**Figure 5-1: Histogram showing monthly standard deviation for HFT-funds.**



**Figure 5-2: Histogram showing monthly semivariance and accumulated percentage.**

Furthermore we see that normal and semivariance standard deviation correlates but with semivariance being lower than variance. In figure 7-3 we see an almost perfect correlation between normal and semivariance-based standard deviation.

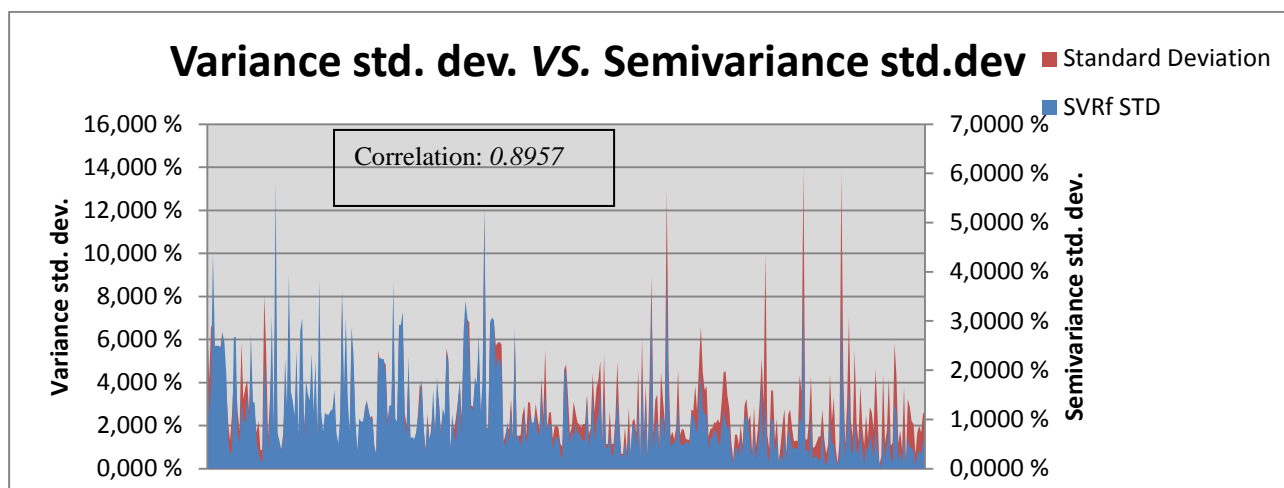


Figure 5-3: Correlation between normal and semivariance std. dev. for each fund

After finding the characteristics of the risk and return data we measured our HFT-database against the hedge fund- and market benchmarks. The following Table 7-12 shows the risk and return data for our database and the benchmarks.

<i>A: Indices</i>	<i>Variance</i>	<i>Standard deviation</i>	<i>Semivariance Risk-free rate</i>	<i>Percentage of positive months</i>	<i>Average monthly returns</i>
MSCI World index	0.27 %	5.163 %	0.115 %	58.33 %	0.097 %
S&P 500 Composite	0.25 %	5.029 %	0.106 %	54.49 %	0.115 %
Eurekahedge Hedge Fund Index	0.02 %	1.546 %	0.006 %	70.51 %	0.794 %
Hennesee Hedge Fund Index Global	0.04 %	1.920 %	0.013 %	64.74 %	0.502 %
<b>B: Average HFT-funds</b>	<b>0.15 %</b>	<b>3.028 %</b>	<b>0.025 %</b>	<b>59.49 %</b>	<b>0.390 %</b>
<i>C: Percentage of HFT-funds over Index-values</i>	<i>Variance</i>	<i>Standard deviation</i>	<i>Semivariance Risk-free rate</i>	<i>Percentage of positive months</i>	<i>Average monthly returns</i>
MSCI World index	13.42 %	13.42 %	3.42 %	53.42 %	75.26 %
S&P 500 Composite	14.21 %	14.21 %	3.68 %	71.05 %	73.68 %
Eurekahedge Hedge Fund Index	76.05 %	76.05 %	52.89 %	12.63 %	19.21 %
Hennesee Hedge Fund Index Global	65.53 %	65.53 %	31.58 %	30.53 %	38.42 %

Table 5-12: HFT-funds compared to benchmarks; Risk and Return. 12 mnth

Table 7-12 is focused on the risk and return for HFT-funds and the benchmarks. **A** shows the average of the benchmarks' risk and return within our sampling period (January 2000 – December 2012). **B** shows the average for the measured HFT-funds within the same period. **C** shows the percentage of HFT-funds having higher values than the benchmarks on the different parameters (i.e. 76.05% of the funds in our HFT-database have a higher variance than the Eurekahedge Hedge Fund Index and 53.24% of the HFT-funds have a higher percentage of positive months than the market (MSCI) ).

## 5.4 Correlation and Performance Ratios

We use the MSCI World Index as our world market, and measure correlation and tracking error using this benchmark.

Based on monthly returns

<i>A: Indices</i>	<i>Correlation with market</i>	<i>Sharpe Ratio</i>	<i>Treynors measure</i>	<i>Jensens Alpha</i>	<i>Tracking error</i>	<i>Information Ratio</i>	<i>Sortino Ratio RF</i>	<i>Beta</i>
MSCI World index	1.00	0.019	0.019	0.000	0.000	0.000	-0.172	1.000
S&P 500 Composite	0.97	0.023	0.024	0.000	0.013	0.015	-0.173	0.946
Eurekahedge Hedge Fund Index	0.69	0.513	0.744	0.002	0.043	0.189	0.153	0.206
Hennessee Hedge Fund Index								
Global	0.76	0.261	0.342	0.000	0.039	0.124	-0.155	0.284
<b>B: Average HFT-funds</b>	<b>0.26</b>	<b>0.2011</b>	<b>-0.0069</b>	<b>-0.0017</b>	<b>0.0565</b>	<b>-0.0116</b>	<b>-0.6808</b>	<b>0.2037</b>

<i>C: Percentage of HFT-funds over Index-values</i>	<i>Correlation with market</i>	<i>Sharpe Ratio</i>	<i>Treynors measure</i>	<i>Jensens Alpha</i>	<i>Tracking error</i>	<i>Information Ratio</i>	<i>Sortino Ratio RF</i>	<i>Beta</i>
MSCI World index	0.00 %	79.47 %	21.05 %	34.47 %	92.37 %	44.21 %	33.16 %	4.47 %
S&P 500 Composite	0.00 %	78.95 %	19.74 %	35.00 %	91.58 %	38.68 %	33.42 %	4.47 %
Eurekahedge Hedge Fund Index	11.84 %	7.63 %	0.79 %	23.42 %	80.53 %	4.21 %	23.68 %	36.05 %
Hennessee Hedge Fund Index								27.37 %
Global	5.26 %	29.21 %	2.89 %	35.00 %	83.95 %	10.53 %	31.84 %	%

**Table 5-13: HFT-funds compared to benchmarks; Ratios. 12 mnth**

In table 7-13 A shows the market (MSCI) correlation for the benchmarks in addition to different performance ratios. B shows the average of the HFT-funds different performance ratios. C shows the percentage of HFT-funds having higher values than the benchmarks on the different parameters (i.e. none of the HFT-funds have a higher correlation with the market than the S&P 500, or 36.05% of the HFT-funds have a higher beta than the Eurekahedge Hedge Fund Index).

Furthermore we have measured the returns of the market and the benchmarks in the exact period the HFT-funds have been active (i.e. if an HFT-fund was alive from 2009 through 2010, it has been compared with the market and benchmarks for exactly that period of time). This we did to get a compatible set of data to analyze. The average return since inception and the percentage of how often the HFT-funds, the market and the benchmarks outperform each other can be seen in table 7-14.

<i>Average return since inception</i>	<i>Percentage above market</i>	<i>Percentage above Eurekahedge</i>	<i>Percentage above Hennessee</i>	<i>Percentage above HFT</i>

<b>HFT-funds</b>	<b>33 %</b>	<b>57 %</b>	<b>40 %</b>	<b>49 %</b>	<b>0 %</b>
MSCI World index	14 %	0 %	44 %	49 %	43 %
Eurekahedge Hedge Fund Index	42 %	56 %	0 %	82 %	60 %
Hennessee Hedge Fund Index Global	27 %	51 %	18 %	0 %	51 %

**Table 5-14: Results compared against market and benchmarks.**

After analyzing the return and compared the performance of the different benchmarks and funds, we found it natural to have a look at some ratio targets for the HFT-funds. For the 380 HFT-funds we have analyzed we set a target for the Sharpe-, Information- and Sortino ratio and checked how many of the HFT-funds were rated “Good” or “Bad”. There was a small share of the HFT-funds for which we were not able to calculate the information ratio, this was mostly due to the variation being equal to 0 (affects the tracking error) for some of the funds.

<b>HFT-funds</b>	<i>Sharpe ratio; Target 1</i>	<i>Information ratio; Target 0.5</i>	<i>Sortino ratio; Target 0</i>
Bad	97.9 %	91.8 %	71.8 %
Good	2.1 %	0.5 %	28.2 %
<i>Unattainable</i>	<i>0.0 %</i>	<i>7.6 %</i>	<i>0.0 %</i>
Total	100.0 %	100.0 %	100.0 %

**Table 5-15: Ratio performance HFT-funds. Target=Good.**

Seeing that we have collected hedge funds with four different kind of strategy classification (“Black box” from Eurekahedge, “Active Trading”, “Equity Market Neutral” and “Quantitative Directional” from the HFR-database) we thought that there might be return differences between these classifications. As mentioned earlier we cannot say for sure to what extent the hedge funds in each category are using HFT, except for the funds collected from Eurekahedge (which are only using high frequency and/or computerized trading algorithms). The data we have used is the Return since Inception/January 2000 for the HFT funds, and the corresponding returns for the benchmarks.

<b>HFT-funds</b>	<i>Active trading</i>	<i>Eq. Mark. Neutral</i>	<i>Quant. Direct.</i>	<i>Black Box</i>
Average return:	35.63 %	24.45 %	26.63 %	100.90 %
<b>Benchmarks</b>	<i>MSCI World Index</i>	<i>Eurekahedge</i>	<i>Hennessee</i>	
Average return:	14 %	42 %	27 %	

**Table 5-16: Average annual return divided by trading strategy.**

## 6 Discussion

### 6.1.1 Risk and Return

First of all we checked the general distribution of the risk of the 380 HFT-funds, and found that both average monthly return and risk (variance/semivariance) increased depending on how long the fund had been alive (as seen from table 7-10). An increase in age (number of observations) should lead to lower variance (risk) as the data should get closer to a normal distribution, thus canceling the effect of extreme outliers. Although we see from table 7-10 that this is not the case. However we have found no conclusive explanation for this, but we believe that the reason for this anomaly could be the financial crisis from 2007-2009 (which most of the funds aging 5 years and more would be a part of). The main reason for us to analyze the dispersion of the monthly return and risk was to check if there was any serious outliers before we compared the risk and return of the HFT-funds with the risk and return of the rest of the hedge fund database. As seen from table 7-11 the average for the entire HFR-database of hedge funds is 0.70% for monthly returns and 4.46% for monthly standard deviation. This is a substantial difference compared to HFT-funds, and might imply that the HFT-funds are producing worse returns than other hedge funds. We see though, that the risk of the HFT-funds seems to be lower, which most likely come from the fact that HFT-funds often use market-neutral strategies. This could balance the different average monthly return, it would all come down to a potential investors relation to risk.

Furthermore we analyzed the difference between the standard deviation calculated from the variance and the semivariance. As we see from figure 7-1 the majority of the funds have a normal standard deviation ranging from 2-4%, while the majority of the funds have a standard deviation based on semivariance of less than 2%. Referring again to our earlier discussion on semivariance we see that by using this as a risk-measure you get a lower risk. We think that the use of semivariance is superior to the use of variance. It is a sound argument that it is the variance below a set benchmark or goal that is really interesting for the investors. No investor with a normal risk aversion would say no to an investment that has only positive returns. This investment might still have variance, but as long as this variance is above the benchmark the investor feels his returns must be superior to, all investors with the same preferences will take this investment. Therefore the semivariance, measuring only the variance under a set benchmark, would provide a better measure of risk. We also see from figure 7-3 that the normal standard deviation and the semivariance-based standard deviation are correlated with a

correlation coefficient of 0.89, meaning that the semivariance and the variance are correlated but the fluctuation of the semivariance is slightly lower.

After the analysis of the risk and its components we compared the risk of the HFT-funds with the risk of our benchmarks. As we see from Table 7-12 the average of our HFT-funds does not show any immediate superiority towards the hedge fund benchmarks when it comes to risk. When we take a look at the risk of the funds in table 7-12 *B* (using both normal variance and semivariance) we see that HFT-funds are less risky compared to the market benchmarks but considerably more risky than the hedge fund benchmarks. The average HFT-funds have a monthly standard deviation of about 3% while the Eureka hedge and Hennessee have respectively 1.5% and 1.9%. By using the values from *A* as thresholds, and measuring the percentage of the HFT-funds having values higher than these, we see from *C* that the majority of the HFT-funds have a higher variance than the HFT-benchmarks. If we take a look at the semivariance we see that the HFT-funds perform better (meaning that they have variance, but that most of the variance is related to returns above the risk-free rate). The Eureka hedge index still outperforms our HFT-funds, but by less, and now “only” 1/3 of the HFT-funds have a higher risk than the Hennessee index (compared to over 2/3 when measuring variance). Finally we see from both the percentage of positive months and the average monthly returns (also see table 7-12) that the HFT-funds have problems performing better than the hedge fund-indices, but are easily outperforming the market-indices. In 75% of the observations the HFT-funds have a higher monthly return than the average of the MSCI World Index, while the same number is only 19% compared to the Eureka hedge index.

### **6.1.2 Correlation and Ratios**

As we see from table 7-13 the average HFT-funds have a very low correlation to the market, a strong confirmation of the fact that these funds are using market neutral strategies. When we check the performance ratios for the HFT-funds there are not many promising results. The one ratio that seems to suggest that they are performing ok is the Sortino ratio (ref. table 7-15). There can be many different reasons for these bad results when it comes to performance ratios, but the one that we are leaning towards is that many of today’s performance ratios are not compatible with the return dispersion of HFT-funds. Furthermore hedge funds are often subject to performance smoothing, and thus performance ratios should be interpreted with some skepticism. As discussed in chapter 4.2 about illiquid assets the potential bias this possesses differs between hedge fund styles. HFT-funds typically have less illiquid assets and

are not subject to performance smoothing to the same degree as other hedge funds. This may explain the difference in both performance ratios and the previously discussed risk (variance). We also see that the beta of the HFT-funds is relatively low (0.20) implying that they have very little systematic risk. This is not unique to HFT-funds, but is rather a typical trait of hedge funds. When comparing HFT-funds with the exact same return period for the benchmarks, we see some interesting results. In table 7-14 we see that HFT-funds do not produce superior results, even though they produce good results. 57% of the HFT-funds produce better returns than the market when comparing the market and the funds over the exact same time period. This is marginally better than our two hedge funds benchmarks. At the end of table 7-14 we see that in 60% of the cases the Eureka hedge Index performs better than the HFT-funds, while the same number is 51% for the Hennessee Index.

After seeing these returns we also divided our HFT-funds in the different strategy classifications, and as table 7-16 shows the Eureka hedge-strategy “Black Box” perform significantly better than the other strategies. When we found this we started to take a closer look at our hedge fund-data from Eureka hedge, and found it to be only positive returns for this strategy, with a great deal of extreme returns. We concluded that this must be due to the fact that these funds seem to come from a “top-list” of HFT-funds, and that we have only gotten return data for the 38 best performing hedge funds using HFT (we only got part of their database). But seeing as this is only 38 funds from a total of 380, and the fact that they are indeed HFT-funds we see no reason to remove them from our database. If we focus on the other strategies we see that active trading seems to be performing better than the other two classifications from the HFR-database. But the Eureka hedge Index still seems to perform better than any of the classifications from HFR.

As a final result we see that when we ranked our HFT-funds with 5 different performance ratios (table 7-17 and 7-18), we did not receive the same result, with regards to the ranking of the funds. In the top 10 it was only fund 2 and 32100 that made any reappearance. For the bottom 10 we see a much more clearer trend, with fund 33, 25024, 28812 and 32221 as the funds showing up on the bottom 10-list for 4 out of 5 ratios.



## **7 Concluding remarks**

### **7.1.1 Possible biases and their relevance to the thesis**

The biggest bias, is the fact that hedge funds are not required to publicly disclose their activities. Sharing information with a hedge fund database is voluntary and is often done because a hedge fund wants to attract new investors.

We have not been able to circumvent the earlier mentioned selection bias, as it is impossible for us to control which hedge funds are joining the HFR-database. Thus this bias would have to be taken into account when interpreting the results of this thesis.

Both the survivorship bias and the backfill bias has been circumvented in this study, by means of manually removing hedge funds in the HFR database, and/or changing their return history.

The sampling difference has not been circumvented, due to the fact that we have only gotten access to the academic HFR-database with all fund-identifying information removed. We do not, however, think this bias is a serious source of errors, as we assume that both Eurekahedge and the Hennessee indices are compiled of a representative sample of hedge funds.

The bias of illiquid assets is the bias we believe has the biggest impact on our results. Not so much a result on the HFT-funds returns though, as HFT-funds typically have less illiquid assets than other hedge funds (often even no illiquid assets). It is the comparability of the other hedge funds we believe to be compromised by this bias. Other hedge funds typically have portions of illiquid assets to be able to perform performance smoothing. This may conflict with us comparing HFT-funds with benchmarks made from hedge funds.

### **7.1.2 Conclusion and implications**

The hype for High Frequency Funds has been increasing in the recent years, with their popularity increasing proportionally. In contrast to this our research has shown that HFT-funds deliver no superior return compared to the benchmarks we have chosen. The risk of the HFT-funds seems to be lower than for all the market indices. We have also found that HFT-funds do not have less risk (measured by means of variance and standard variance) than our two hedge fund benchmarks. It does not matter which way we measure risk, HFT-funds have both a higher variance and semivariance. In addition to having more risk, HFT-funds are performing worse with regards to average monthly return, and percentage of positive months. When it comes to which of the risk measures should be used when measuring risk of HFT-

funds, we see from our descriptive statistics analysis that only 40% of the funds are normally distributed. Linking this to Markowitz' (1959), it implies that the majority of HFT-funds should have risk measured by the use of semivariance (or other downside risk measures).

Our results indicate that HFT-funds are using market neutral strategies as their correlation with the market is extremely low, which is also shown by the very low beta values. When ranking our funds using the traditional performance ratios, we see huge differences. Which may imply that the theory, stating that ranking hedge funds with traditional ratios is futile since they give the same result, is wrong, at least when it comes to HFT-funds. One of the reasons for traditional ratios not being able to rank HFT-funds the same, might be the characteristics of HFT-funds; they have very little systematic risk (beta), a big share of autocorrelation among the funds and the lack of normal distribution. One thing we can say for sure (as long as the theory of Jensen's alpha holds, and considering our descriptive statistics) is that HFT-funds are not providing statistically significant alpha-values, i.e. they are not beating the required rate of return as given by the CAPM.

Finally, when comparing HFT-funds' returns to the returns of our hedge funds indices, we see that HFT-funds are not superior to other hedge funds. At best they are equally good, but very often they are performing worse. This is not to say our results are representative for all HFT-funds, only the ones analyzed in this thesis. Although, the sample of HFT-funds we have gathered is quite extensive and could show a trend among all the HFT-funds available in the market. Our conclusion using the data and analysis of this thesis is that there does not seem to be an edge in the use of HFT.

As a final comment, we would like to address the fact that the use of HFT has exploded in the market during the last decade (Gomber, et. al, 2011). Our findings may suggest that the time of extremely high returns from "super robots" using HFT is over. If we relate this to the efficient market hypothesis, it states that if you have a competitive advantage you can consistently beat the market (or in this case, hedge fund indices). Since HFT-funds no longer seem to be able to do this, we interpret this as proof of the market catching up with the technological development HFT used to represent. This can again be related to the recent comment from Frederi Viens, Director of the Computational Finance program at Purdue University: "... *the net profits from high-frequency trading have been falling steadily, from an estimated peak of \$5bn in 2009 to around \$1.25bn in 2012*" (Financial Times, 2013). This is

not to say that there is no use for HFT in the market, but rather that HFT has become a part of the market in creating liquidity and efficiency.

One of the reasons that this might have happened to the use of HFT is that governments have become more rigid in the regulations directed towards HFT. There is now a new EU-regulation to be passed which will limit the use of quote stuffing, or “the dark arts” of HFT (see chapter 2.3); the MiFID II regulation. This may lead to further complications for the use of HFT in markets. One example of these kind of regulations is the order to transaction-cost, saying that you can only have put so many orders before you have to buy, if not you have to pay an extra fee (a ratio of 100/1 is normal).

### **7.1.3 Critique**

The first area of uncertainty is the fact that we do not really know for sure to which degree our chosen HFT-funds use HFT as a trading strategy. We are subject to the classifications made by the HFR-database and in the end what the hedge funds are stating. Furthermore there might be someone that thinks we should have used other performance ratios to check for the total effect of the discovered autocorrelation. Relating to this we could also have used other/more models to find residuals and see how big the change would have been using these. We could also have used more data in our analysis, rather than just relying on the HFR-database. Although, this was difficult for us seeing as we had a rather limited amount of resources (read: money) for our research. As a final comment we are fully aware that there might be miscalculations in one of our many extensive spreadsheets. We have done our best to ensure the quality of our calculations, but since we are not “super-robots” the possibility of human errors will always be there.

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## Appendix 1 – HFR Fund Strategies

As collected from <https://www.hedgefundresearch.com/index.php?fuse=indices-str>.

### **Equity market neutral**

**EH:** Equity Market Neutral strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. These can include both Factor-based and Statistical Arbitrage/Trading strategies. Factor-based investment strategies include strategies in which the investment thesis is predicated on the systematic analysis of common relationships between securities. In many but not all cases, portfolios are constructed to be neutral to one or multiple variables, such as broader equity markets in dollar or beta terms, and leverage is frequently employed to enhance the return profile of the positions identified. Statistical Arbitrage/Trading strategies consist of strategies in which the investment thesis is predicated on exploiting pricing anomalies which may occur as a function of expected mean reversion inherent in security prices; high frequency techniques may be employed and trading strategies may also be employed on the basis on technical analysis or opportunistically to exploit new information the investment manager believes has not been fully, completely or accurately discounted into current security prices. **Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short**

### **Quantitative directional**

**EH:** Quantitative Directional strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. These can include both Factor-based and Statistical Arbitrage/Trading strategies. Factor-based investment strategies include strategies in which the investment thesis is predicated on the systematic analysis of common relationships between securities. Statistical Arbitrage/Trading strategies consist of strategies in which the investment thesis is predicated on exploiting pricing anomalies which may occur as a function of expected mean reversion inherent in security prices; high frequency techniques may be employed and trading strategies may also be employed on the basis on technical analysis or opportunistically to exploit new information



the investment manager believes has not been fully, completely or accurately discounted into current security prices. **Quantitative Directional Strategies typically maintain varying levels of net long or short equity market exposure over various market cycles.**

### **Active trading**

**Macro: Active Trading** strategies utilize active trading methods, typically with high frequency position turnover or leverage; these may employ components of both Discretionary and Systematic Macro strategies. Strategies may contain distinct, identifiable sub-strategies, such as equity hedge or equity market neutral, or in some cases a number of sub-strategies are blended together without the capacity for portfolio level disaggregation. Strategies employ an investment process based on systematic, quantitative evaluation of macroeconomic variables in which the portfolio positioning is predicated on convergence of differentials between markets, not necessarily highly correlated with each other, but currently diverging from their historical levels of correlation. Strategies focus on fundamental relationships across geographic areas of focus both inter and intra-asset classes, and typical holding periods are shorter than trend following or discretionary strategies. Diversified Trading strategies are distinct from other macro in that Trading strategies characteristically emphasize rapid market response to new information and high volume of turnover in liquid but frequently volatile and unstable market positions.

## Appendix 2 – Research parameters

All parameters calculated in Excel.

### 1. Return since inception

- Accumulated yearly return
  - Sum of yearly return

### 2. Best monthly return

- Max value of monthly returns
  - Max-formula on monthly data

### 3. Worst monthly return

- Min value of monthly returns
  - Min-formula on monthly data

### 4. Variance

- Variance of monthly data
  - Var.S.-formula on monthly data

### 5. Semivariance RF

- Semivariance with regard to risk-free rate (0.68%)
  - Var.S if monthly return was lower than risk-free rate.

### 6. SVRf STD

- Standard deviance of semivariance RF
  - SQRT-formula on Semivariance RF

### 7. Annualized SVRf STD<sub>v</sub>

- Annualized SVRf STD (multiplied by square root of 12)
  - SVRf multiplied with SQRT(12)

### 8. Semivariance benchmark

- Semivariance with regard to benchmark (average of MSCI World)
  - Var.S if monthly return was lower than market benchmark

### 9. SVB STD

- Standard deviance of semivariance benchmark
  - SQRT-formula on Semivariance benchmark

## **10. Annualized SVB STD**

- Annualized standard deviance of semivariance benchmark (multiplied by square root of 12)
  - SVB STD multiplied with SQRT(12).

## **11. Standard deviation**

- Standard deviation of monthly returns
  - STDEV.S on monthly data/SQRT of Variance.

## **12. Annualized STDv**

- Annualized standard deviation of monthly returns
  - Standard deviation multiplied with SQRT(12).

## **13. Kurtosis**

- Kurtosis of monthly returns
  - KURT-formula on monthly data.

## **14. Skewness**

- Skewness of monthly returns
  - SKEW-formula on monthly data.

## **15. Correlation with market**

- Correlation of monthly data with regard to MSCI World monthly data.
  - CORREL-formula on monthly data and market-data.

## **16. Number of months alive**

- Total number of monthly return-data.
  - COUNT-formula on monthly data.

## **17. Percentage of positive months**

- Percentage of months with positive return (above 0)
  - COUNTIF-formula above 0 divided by COUNT-formula.

## **18. Average monthly return**

- Average monthly return
  - AVERAGE-formula on monthly returns.

## **19. Sharpe Ratio**

- Sharpe ratio of yearly returns, average 3-month T-bill rate January 1995 including February 2013 and Standard Deviation.
  - (Average monthly return-Risk-free rate)/Standard deviation

## 20. Treynors Measure

- Treynors measure with yearly returns, average 3-month T-bill rate January 1995 including February 2013, and covariance between yearly return-data and MSCI World with standard deviation of market (MSCI).
  - $(\text{Average monthly return} - \text{Risk-free rate}) / \text{Beta}$

## 21. Jensens Alpha

- Jensens Alpha with yearly returns, average 3-month T-bill rate January 1995 including February 2013, covariance between yearly return-data and MSCI World with standard deviation of market (MSCI) and average yearly market (MSCI) return.
  - $\text{Average monthly return} - (\text{Risk-free rate} + (\text{Beta} * (\text{average market return} - \text{risk-free rate})))$ .

## 22. Tracking error

- Standard deviation of active return (active return calculated with monthly return and correspondent monthly market return).
  - STEDEV.S of active return.

## 23. Information ratio

- Information ratio calculated with average yearly active return and tracking error.
  - Average of active return divided by Tracking error.

## 24. Statistical significance of IR

- Statistical significance of information ratio shown by a t-test between monthly active return and monthly market return.
  - T.TEST-formula on Information ratio.

## 25. Sortino Ratio RF

- Sortino ratio with regard to risk-free rate, monthly return data, risk free rate and Semivariance RF.

$(\text{Average monthly data} - \text{risk-free rate}) / (\text{risk-free rate} + (\text{Beta} * (\text{average market return} - \text{risk-free rate})))$

# Management control systems in education and student performance – a descriptive/explorative case study

Working paper (indeed©), October 2013

Liv Bente H. Friestad, UiA

## Abstract

For decades, researchers have studied whether and how school and teacher characteristics, school expenditures, students' family background, school management and a range of other factors could explain the observed variance in student performance between schools and school districts. However, limited attention has been paid to the role of management control systems, and whether design and use of management control systems in schools and municipal education authorities affect student performance. The present study seeks to narrow this gap by exploring what types of management control systems schools and municipal education authorities have, how they are used, how they relate to each other, and whether design and use of management control systems affect student performance. Malmi and Brown's (2008) management controls as a package framework forms the basis for the design dimensions, while the use dimension is based on Simon's (1995) distinction between interactive and diagnostic control systems. Head teachers and other employees in six schools and three municipal education authorities have been interviewed. In addition, information is collected from websites, plans, reports and other types of written material. Preliminary analyses propose that differences with respect to design and use of management control systems are related to the degree of learning focus within schools and municipal education authorities, to head teachers' and school administrators' professional background and to school building characteristics. When it comes to effect on student performance, more analyses are required.

## Introduction

For decades, researchers from several research traditions have studied whether and how factors both controllable and uncontrollable by schools and school authorities influence school efficiency. School economics researchers have studied the impact on student performance and school efficiency of factors such as school size (Barnett, Glass, Snowdon, & Stringer, 2002; Foreman-Peck & Foreman-Peck, 2006; Kuziemko, 2006; Lamdin, 1995), class size (Cooper & Cohn, 1997; Correa, 1993; Ding & Lehrer, 2011; Hoxby, 2000), allocation of time on different teaching and learning activities (Brown & Saks, 1987; Kuziemko, 2006; Millot & Lane, 2002; Rice, Croninger, & Roellke, 2002), the number of teachers relative to the number of pupils (Hanushek, 2002; Stern, 1989), the teachers' education and experience (Hanushek, 2006b; Leigh, 2010) the teacher wage systems and teachers' wage level (Cooper & Cohn, 1997; Southwick & Gill, 1997; Stern, 1989), teacher unions (Hoxby, 1996), peer effects (Epple & Romano, 2010), grouping pupils according to skills (Betts & Shkolnik, 2000; Glewwe, 1997; Zimmer & Toma, 2000), school resources (e.g. Hanushek, 1986, 1997, 2006a) and pupils' socioeconomic background (e.g. Coleman et al., 1966). Effects on student performance of implementation of reforms such as free school choice (Borland & Howsen, 2000; Friedman, 1997; Hastings & Weinstein, 2008; Stevans & Sessions, 2000) and devolved financial management (e.g. Grosskopf & Moutray, 2001) have also been studied, as well as whether and how school building

characteristics affect student performance (Earthman & Lemaster, 1996; Higgins, Hall, Wall, Woolner, & McCaughey, 2005). In general, this research finds that students' family background has a significant effect on student performance. For factors controllable by schools and school authorities, such as teacher quality, school size, class size, school building characteristics and school resources as well as for reforms like free school choice and devolved financial management, the estimated effects on student performance are more ambiguous (e.g. Hanushek & Welsh, 2006; Lamdin & Mintrom, 1997).

Within the field of management accounting research a number of studies have focused on issues related to how schools and local educational authorities respond to implementation of formula funding, devolved financial management and local management of schools (Agyemang, 2010; Broadbent & Laughlin, 1998; Edwards, Ezzamel, McLean, & Robson, 2000; Edwards, Ezzamel, & Robson, 1999; Edwards, Ezzamel, & Robson, 2005; Edwards, Ezzamel, Robson, & Taylor, 1995; Edwards, Ezzamel, Robson, & Taylor, 1996; Laughlin, Broadbent, Shearn, & Villig-Atherton, 1994; Levacic, 1990). Others have estimated school district efficiency using DEA analysis (Chalos, 1997) and stochastic frontier estimation (Dopuch & Gupta, 1997), applied a cost driver approach in order to understand cost differences in schools (Bjørnenak, 2000), compared the accountability models in education in New Zealand and England (Broadbent, Jacobs, & Laughlin, 1999), and studied Private Finance Initiative in schools (Ismail & Pendlebury, 2006) and whether and how formula funding and devolved budgeting affect equity in education (Mayston, 1998). Apart from the number of studies focusing on formula funding, devolved financial management and local management of schools, the body of management accounting research on schools and education is fragmented with respect to topics researched, and few studies focus on the relationship between design and use of management control systems and student performance.

Although studies from the field of school economics research have focused on effects on student performance of different management control systems and approaches, and studies from the field of management accounting and control research have studied how schools respond to such changes, there is still a gap of knowledge with respect to whether and how design and use of the package of control systems within schools and local school authorities affect student performance. This fact, combined with the fact that some of the variance in student performance still is unexplained, has spurred an interest for studying the relationship between design and use of the package of management control systems in education and student performance. Due to limited prior research in this field, the objective of the present study is to achieve an in-depth knowledge of what types of management control systems schools and municipal educational authorities have, how they are used, how they relate to each other, and whether the design and use of management control systems, in the following also referred to as controls (Malmi & Brown, 2008), affect student performance.

In the following section, the theoretical framework for the study is further discussed and developed while the third section discusses how the research questions best could be explored and why a case-study approach has been chosen for the present study. The third section also presents the cases and discusses why these cases were chosen for the study. Section four sums up the controls used in the different municipal school sectors and schools and how they are used, while the fifth section discusses the findings and present some proposals (hypotheses) for further research and testing.

## Theoretical framework

Within management accounting research there has been a tendency to focus on specific management control systems rather than on a holistic understanding of the package of management control systems and how the different management control systems relate to each other (Chenhall, 2003; Ferreira & Otley, 2009; Malmi & Brown, 2008). It is claimed that studies of only one or few management control systems might result in underspecified models and spurious results (Chenhall, 2003) as well as a “piecemeal” understanding of how management control systems works in organisations (Margaret A. Abernethy & Brownell, 1997). To avoid such pitfalls, different holistic frameworks for studies of management control systems in organisations has been proposed (e.g. Anthony, 1965; Ferreira & Otley, 2009; Malmi & Brown, 2008; Otley, 1999; Simons, 1995; Tessier & Otley, 2012).

Comparison of Ouchi’s (1979) framework with school production characteristics indicates that both output control and cultural controls such as clan control, rituals and ceremonies might be useful control approaches in schools and education. The fact that Malmi and Brown (2008) include both cultural controls and output controls in their management control systems as a package framework, and in addition include administrative controls, make it an appropriate framework for a study of design dimensions of management control systems in schools and education. Consequently, the present study also follows Malmi and Brown and understand management control systems as *“all the devices and systems managers use to ensure that the behaviours and decisions of their employees are consistent with organisational objectives and strategies, but exclude pure decisions support systems”* (Malmi & Brown, 2008, pp. 290-291). With respect to use dimensions, the present study draws on Simons’ (1995) distinction between interactive and diagnostic control systems.

### Management control systems design dimensions

Malmi and Brown (2008) propose to group management control systems, or controls, into five types of controls; cultural controls, administrative controls, planning, cybernetic controls, and reward and compensations. The way they illustrate the management control system package (figure 1) indicates that planning, cybernetic controls and reward and compensations constitute one category of control systems, in the following referred to as “traditional management controls”, while “cultural controls” and “administrative controls” constitute two other categories of control systems.

Figure 1 The control package (Malmi & Brown, 2008)

<b>Cultural controls</b>						
Clans		Values			Symbols	
<b>Planning</b>		<b>Cybernetic Controls</b>				<b>Reward and Compensation</b>
Long Range Planning	Action Planning	Budgets	Financial Measurement Systems	Non Financial Measurement Systems	Hybrid Measurement systems	
<b>Administrative Controls</b>						
Governance Structure		Organisation Structure			Policies and Procedures	

### Cultural controls

Malmi and Brown (2008) follow Flamholtz et al (1985) and define organisational culture as “the set of values, beliefs and social norms which tend to be shared by its members and, in turn, influence their thoughts and actions” (p158), and they define cultural control as consisting of three “aspects of cultural control; value based controls, symbol-based controls and clan controls” (Malmi & Brown, 2008, p. 294). Value based controls are related the control systems called belief systems by Simons (1995) and function as a control mechanism by influencing behaviour in the desired direction. Vision statements, credos, objective statements and codes of conduct are examples of documents and expressions used in order to communicate and facilitate common organisational values, objectives and directions for the future (Malina & Selto, 2001; Malmi & Brown, 2008; Simons, 1995). Value based controls are assumed to influence behaviour in three ways; trough recruitment of individuals sharing the organisational values, 2)trough socialisation of the individual employee/groups of employees resulting in individual values aligned with the organisational values and 3) when individuals behave in accordance with organisational values even if their personal values might deviate from organisational values (Malmi & Brown, 2008).

The second aspect of cultural controls in Malmi and Brown’s (2008) framework is referred to as “symbol based controls” (Malmi & Brown, 2008). Symbols are visible expressions used in order to produce beliefs and values (Feldman & March, 1981) and to maintain or develop a particular type of culture (Schein, 1997 referred in Malmi and Brown, 2008). Dress code and design of buildings and workspace are mentioned as examples of visible expressions signalling organisational culture (Malmi & Brown, 2008).

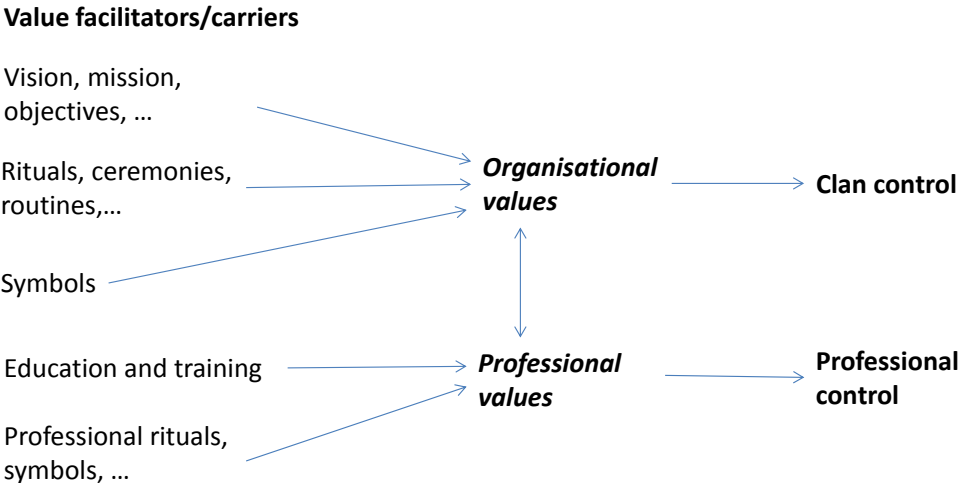
“Clan controls” is the third aspect of cultural control (Malmi & Brown, 2008). “Clans” refer to groups of individuals with a common understanding of values and believes (Dent, 1991), while clan controls refer to the informal social structures within an unique organisation and the common understanding of values and boundaries the employees are socialised into when entering the organisation (Ouchi, 1979)(Malmi & Brown, 2008). In line with Ouchi (1979), who refers to clan control as a separate form of control that might be useful under certain circumstances, in the following clan control is considered a separate type of cultural controls.



In professional organisations, like schools, employees usually have been socialised into a common understanding of values and practices during their education. This type of clan control is referred to as professional control (Ouchi, 1979). In organisations where the employees belong to one or several professional groups, it is reasonable to assume that employee behaviour might be influenced by both professional and organisational values, and that conflicts might occur between organisational and professional values and norms and between different professional groups. For that reason, and even if it might be difficult to distinguish between them, in the following both professional control and clan control are mentioned as cultural controls.

Researchers consider it possible to influence organisational culture by use of value and symbol based controls (Malmi & Brown, 2008) or belief systems (Simons, 1995). However, organisational culture is also considered a contextual and contingent variable influencing and pervading the management control systems without being a control system or control system element itself (Ferreira & Otley, 2009). In the present paper, it is assumed that it is possible for managers to influence respectively the organisational and professional values and culture, and thereby influence the clan and professional controls by use of “value facilitators/carriers” such as vision, mission and objective statements, symbols, education, training, traditions and rituals. However, the opposite might also be possible; that the organisational and professional values influence the value facilitators/carriers and their role in the organisation. Therefore, the interrelationships between the “carriers/facilitators” of organisational and professional values and the four aspects of cultural controls might be as illustrated in figure 2 below. In the following it is assumed that the value facilitators/carriers are the devices that managers have to their disposal in order to control organisational and professional values and thereby professional and clan controls.

Figure 2: Cultural controls and organizational and professional values



**Planning**

Planning, the second type of control in Malmi and Brown’s management control systems as a package framework, is defined as the process where goals for the organisation and the organisational units are set, and the “standard to be achieved” and “the level of effort and behaviour expected” are

made clear to organisational members (Malmi & Brown, 2008, p. 292). Others define planning as “a process of choosing and setting in train activities to achieve certain goals” (Berry, Broadbent, & Otley, 2005b, p. 45) and strategic planning as the process where “decisions are made within the context of the goals and strategies that emerged from the strategy formulation activity” (Anthony & Young, 2003, p. 18). Planning constitutes an ex ante form of control (Malmi & Brown, 2008) and even if definitions of planning are some different, the definitions agree that planning is a process where future goals, standards, activities to achieve the goals, decisions and expected behaviour and levels of effort are decided.

Malmi and Brown (2008) split planning into action planning which is planning for a short horizon and with a tactical focus, and long range planning which has a more strategic orientation. Although short run planning, action planning, could have a time horizon of only a few days (Berry et al., 2005b), short term planning do often refer to planning with a one year time horizon while long range plans might be prepared for several years or even decades (Anthony & Young, 2003; Berry et al., 2005b)

Malmi and Brown (2008) define planning as a separate form of control distinguished from budgeting, financial and non-financial performance measurement and the cybernetic control process, and they mention that planning could take place without reference to budgets or financial measures. In other conceptual frameworks, for instance in the management control process (e.g. Anthony & Young, 2003), planning is coupled to budget and performance measurement and constitute one of four phases in a cyclical management control process.

Planning has been criticized for always been wrong because it is impossible to estimate the future accurately and for the possibility that plans are interpreted rather than followed (Anthony & Young, 2003). Despite this, planning and plans are considered as potentially important activities and control devices and considered a separate type of control system.

### Cybernetic controls

The third type of controls in Malmi and Browns’ (2008) management control system as a package framework is cybernetic controls. A cybernetic control process is a purposive process where actual performance is compared to a standard, where any deviation between the two is reported backwards and where necessary changes are made to modify activities or systems in order to reduce or eliminate the deviation (Green & Welsh, 1988). Malmi and Brown (2008) include budgets, financial measures, non-financial measures and hybrid systems, containing both financial and non-financial measures, in the “cybernetic controls” type of management control systems.

From management accounting and control theory, we know that plans, budgets and financial and non-financial performance measurement systems might also be used as information and decision support systems, to communicate goals and strategies and to direct attention towards activities and behaviour of strategic importance (e.g. Berry, Broadbent, & Otley, 2005a; Malina & Selto, 2001). Further, formal management control systems, as well as planning, might be used for legitimating purposes (Brunsson, 1989; Edwards et al., 2000; Edwards et al., 1995) and to prevent organisations or organisational units from undesirable influence from their superiors (Broadbent & Laughlin, 1998; Laughlin et al., 1994).

Planning and budgeting are referred to as ex ante forms of control, and a budget is defined as a plan transformed or “translated” into monetary terms (e.g. Anthony & Young, 2003). In the same way as planning might be short term and/or long term planning, budgeting might also be short and/or long term. For these reasons, planning and budgeting could have been handled as one type of controls. However, the present study follows the “management control process” (e.g. Anthony & Young, 2003), and refers to planning and budgeting as two separate types of controls.

The remaining part of the “cybernetic controls” in Malmi and Brown’s (2008) framework includes three types of controls; financial, non-financial and hybrid measurement systems, indicating that performance evaluation should be based on formal performance measures. Ferreira and Otley (2009) propose another approach to performance evaluation and include both subjective, objective and mixed performance information as well as formal and informal information and controls. Organisations, and especially public organisations providing professional services, might have ambiguous objectives and/or produce services that are difficult or impossible to measure. Therefore, it might be difficult or impossible to only use formal and objective performance measures for control purposes (Hofstede, 1981; Ouchi, 1979). In the present paper, Malmi and Brown’s (2008) financial, non-financial and hybrid measurement systems are replaced by a group of control systems referred to as “performance measurement and evaluation systems”. This group of control systems might include formal performance measurement and evaluation systems as well as routines such as evaluating accounting reports against budgets, actuals performance against plans, and other forms of formal and informal performance measurement and evaluation procedures based on subjective and/or objective measures and information.

### Rewards and compensations

Rewards and compensations, the fourth group of management controls in the management control package (Malmi & Brown, 2008), might be monetary (compensations) or non-monetary and might be given to individual employees and/or to groups of employees. Bonus and salary increases are examples of monetary rewards, while recognition, praise, titles, and job and office assignments are examples of non-monetary rewards. Absence of rewards and “naming and shaming” are examples of negative rewards/punishment (Merchant & Van der Stede, 2012).

Rewards could be linked to formal control systems, such as budgets, but also to other and more informal control systems and information and/or subjective evaluations (Malmi & Brown, 2008; Merchant & Van der Stede, 2012). They might be extrinsic, which means that they are “*tangible, observable outcomes given to the individual upon completion of a task*”, or intrinsic which means that “*rewards can be received and experienced by the individual independent of the organizational evaluation process*” (Flamholtz et al., 1985, p. 43). Further, they might be used in order to motivate employees to increased effort and performance and to build or maintain cultural control (Malmi & Brown, 2008). It is also known that unintended and adverse effects of incentive systems are common (Merchant & Van der Stede, 2012).

In the following, rewards and compensations is maintained as a separate type of control systems included in the group of management controls referred to as “traditional management controls”.

## Administrative controls

Administrative controls, the fifth type of controls in Malmi and Brown's framework (2008), is split into three subcategories; organizational structure, governance structure, and procedures and policies.

Organisational structure refers to *"the formal specification of different roles for organisational members, or tasks for groups, to ensure that the activities of the organisation are carried out"* (Chenhall, 2003, p. 144). Consequently, it is about how the employees in an organization are organized in groups and hierarchies and it *"determines the responsibilities and accountabilities of organisational participants; it equally defines the activities that individuals with specific roles should not pay attention to"* (Ferreira & Otley, 2009, p. 269). In addition, organisational structure influences motivation, effort and efficiency of individuals and groups of individuals, as well as the flow of information and how control systems are designed (Chenhall, 2003). The organisational structure might affect the possibility for and role of clan control. For instance, in schools with little cooperation between the teachers and where students and teaching are organized in traditional classes, the extent of clan control might be limited. In a more open school where teachers are organised in teams and the teaching activities are visible for other teachers, clan control mechanisms are probably stronger. Consequently, there might be a relationship between organisational structure and clan/professional control.

In the management control literature, organisational structure is considered a management control system contingency factor (e.g. Chenhall, 2003) as well as a control system (e.g. Ferreira & Otley, 2009; Malmi & Brown, 2008). Since organisational structure is, or at least might be, a result of managerial decisions in order to influence behaviour and/or accountability, the present paper follows Malmi and Brown (2008) and Ferreira and Otley (2009) and consider organisational structure a control system itself.

Governance structure is related to the organisational structure and it is about board structure and composition, management and project teams, the formal lines of authority and accountability, and about systems to secure vertical and horizontal coordination of activities within the organisation (Malmi & Brown, 2008). However, organisations having the same organisational structure might differ with respect to governance structure, for instance, with respect to what the organisational units are accountable for. The organisational units in organisations with identical organisational structure might for instance be accountable for quantities of inputs used, activities performed, quantities produced, revenue, cost and/or profit and/or responsible for characteristics of the production process (Merchant & Van der Stede, 2012).

The third type of administrative controls, policies and procedures, are referred to as *"the bureaucratic approach to specifying the processes and behaviour within an organization"* (Malmi & Brown, 2008, p. 294) and this type of controls include standard operating procedures and practices, rules and policies and action control (op.cit.).

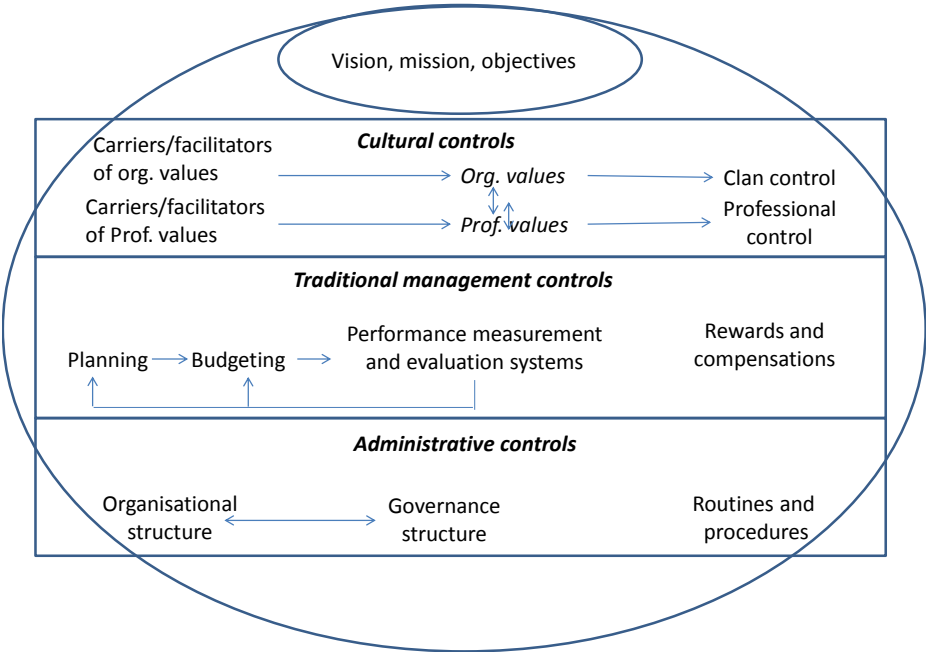
Standard operating procedures and practices, rules and policies include *"the set of written rules, procedures, policies, and operating manuals (SOPs)"* that are *"used to guide managers as they administer their departments"* as well as *"policy guidelines, job descriptions and prescriptions for how managers should handle operational situations that might arise"* (Macintosh & Daft, 1987, p. 51) while action control includes behavioural constraints, preaction reviews, action accountability and

redundancy (Merchant & Van der Stede, 2012). Physical constraint such as locks and passwords, administrative controls such as restricted decision making authority and separation of duties for instance related to payment, are examples of behavioural constraints. Preaction review refers to superiors’ review of a subordinate individual or an organisational unit’s plans before the plans are approved and carried out. Action accountability is about holding employees accountable for actions performed or expected to be performed, while redundancy refers to “*assigning more employees to a task than is strictly necessary*” or “*having backup employees (or equipment) available*” (Merchant & Van der Stede, 2012, p. 84) in order to avoid that critical operations stop or that tasks are not carried out due to lack of employees or equipment (op.cit.).

**A altered management control as a package framework**

The above discussion of Malmi and Brown’s (2008) management control system as a package framework, leads up to a somewhat altered framework for studying design dimensions of management control systems. The altered framework is illustrated in figure 3. First, the altered framework emphasis that all types of control systems and approaches should be based on and communicate organisational values and objectives. Organisational values and objectives are typically stated in vision, mission and objective statements. Therefore, “vision”, “mission” and “objective statements” are mentioned in the top of the illustration even if such statements are also mentioned among the “carriers/facilitators of organisational values” that constitute an element in “cultural controls”. Further, figure 3 illustrates the assumed relationships between carriers/facilitators of organisational and professional values, organisational and professional values and clan and professional control, as well as the couplings between planning, budgeting and performance measurement proposed by normative theory (e.g. Anthony & Young, 2003) and between organisational structure and governance structure.

Figure 3: An altered management control system package framework



## Use dimensions of management control systems

Simons (1995) categorizes management control systems into four types of control systems mainly according to how and for what purposes the management control systems are used (Ferreira & Otley, 2009). The four types of systems are belief systems, boundary systems, interactive systems and diagnostic systems.

Belief systems are “*used to inspire and direct the search for new opportunities*” (Simons, 1995, p. 7) while boundary systems are “*used to set limits of opportunity-seeking behavior*” in order to avoid risks (Simons, 1995, p. 7). The belief and boundary systems relate to the “*cultural controls*” in the management control system package (Malmi & Brown, 2008). Boundaries might be communicated through the same types of documents and other means of communication as for the belief systems. For instance, a mission statement might at the same time convey information about what the individuals and the organization as such should be and achieve, and about what the organization should not carry out or put effort into.

Diagnostic control systems are systems “*used to motivate, monitor and reward achievement of specific goals*” and they typically contain critical performance variables (Simons, 1995, p. 7). Diagnostic use of management control systems refers to comparing actual performance against standards, objectives, plans, budget, and/or benchmarks. Diagnostic control systems could be cybernetic control systems, but diagnostic management control systems do also include management control systems not fulfilling the strong cybernetic feedback circle. Diagnostic use of management control systems and information within an organizational unit is typically carried out by one of a few managers (Margareth A. Abernethy & Brownell, 1999).

The fourth “*levers of control*” are systems “*used to stimulate organizational learning and the emergence of new ideas and strategies*” (Simons, 1995, p. 7). Systems used for this purpose is referred to as interactive management control systems, and are considered useful for organizations facing strategic uncertainty (Simons, 1995). The same (formal) control systems might be categorized as an interactive or a diagnostic control system dependent on how it is used. Interactive use of management control systems is characterized by involvement of managers from different levels of the organization. Typically, interactive use takes place as an open-minded interpretation and discussion of information conveyed by formal systems and information from other sources (Margareth A. Abernethy & Brownell, 1999).

Interactive and diagnostic use relates to how information provided by systems is used. However, the terms “*diagnostic*” and “*interactive*” are also used to describe how management control systems are or could be prepared. For instance whether budgets are prepared interactively in a process involving managers from different levels in an organization or prepared diagnostically by one manager without involvement of other managers or employees (Margareth A. Abernethy & Brownell, 1999).

So far it has been mentioned that the same systems, and/or devices might constitute elements in both beliefs and boundary systems, and that the same systems could be both prepared and/or used interactively or diagnostically. For instance, performance measurement and management system, such as a balanced scorecard, might be prepared and used interactively or diagnostically as well as be a means to communicate organisational strategy, values and boundaries to members of the organisation and thereby also function as a belief and/or boundary system. Consequently, the same measurement control system might fit into all four types of control systems in Simons’ “*levers of*

control". For this reason, it is uninteresting to ask whether a particular control system is a belief, boundary, diagnostic or interactive system. It is more interesting to ask whether the different types of systems and devices are prepared and/or used interactively or diagnostically and to what extent managers intentionally use the different systems and devices in order to communicate beliefs and boundaries.

### **Dimensions of time**

Management control systems might be used continually or more or less frequently. In addition, the information communicated and provided by formal management control systems might be more or less updated, preparation and revisions might take place more or less frequently, and controls like plans and budgets might be prepared for shorter or longer periods of time. It is reasonable to assume that how often management control systems, or management control system elements, are prepared, changed, updated and/or used might indicate the managers emphasis on the different control systems or system elements in their control of individuals and organisational units.

In addition, when systems were implemented or altered is interesting information related to discussions of effects of management control systems. Therefore, when and how often the different control systems were and/or are prepared, updated, and used are dimensions of time that should be added to the dimensions of design and use discussed above.

Now and then organisations make changes in or implement new management control system. Either an existing system is altered or a new system is implemented it may take some time from the change is carried out until intended, or unintended, effects materialize in behaviours and performance. For these reasons, studies of effects of management control systems should also focus on whether management control systems have been recently altered and, if so, when they were altered.

### **A framework for studies of design, use and time dimesions of management control systems**

Inspired by Ferreira and Otley (2009), the above discussion of design, use and time dimensions of management control systems is summed up in terms of questions for each type of controls.



Figure 4: A framework for studying design, use and time dimensions of cultural controls

Types of controls and control elements	Questions related to the dimensions of		
	Design	Use	Time
Vision, credo statement, local mission/objective statements...	Does the organisation have vision, mission, objective .... statement? What are they focused on?	Who participated in the formulation/preparation of the vision, mission, ....? If ever, who bring the vision, mission..... into attention and how? To what extent does the vision, mission .... inspire or delimitate action and effort?	When was the vision, mission .... formulated? For each statement/document: How often is it revised? How often is it brought into attention by school management (headmaster)
Rituals, ceremonies, routines,....(organisational and professional)	What types of rituals, ceremonies and routines does the organisation have?	For each type of rituals, ceremonies, routines: To what extent do they signal beliefs/ boundaries? To what extent do organisational members follows/use/ participate. Who participate in decisions regarding what routines,... the organization use/have? Who bring rituals,... into attention?	For each (type of) rituals, ceremonies, routines...: When were it implemented/ changed? How often/when is it used? How often is it brought into attention by school management (headmaster)?
Symbols (buildings, dresscodes,..)	What (types of) symbols does the organisation have?	Does the organisation deliberately use symbols to signal organisational values? To what extent do they signal beliefs/boundaries? Who participate in decisions regarding what symbols the organization use/have?	When were the different symbols introduced? How often are they revised/changed?
Education and training	What types of supplementary education and training do employees attend?	To what extent do employees attend supplementary education and training? Who decide what type of education and training, and how many (proportion of) employees attend? Are supplementary education and training used as facilitators of cultural control?	How often do employees get an opportunity to participate in supplementary courses and education? How often do they attend supplementary courses and education
Organisational values and clan control	Do management and employees consider their organisation to have common values? To what extent are common values shared by all employees and managers?	To what extent do the values facilitate/inspire to action and effort/direct attention? To what extent do common values delimitate actions and effort?	Have there been recent changes with respect to organisational values and the presence and weight on clan control?
Professional values and control	Are the values of the professionals in line with the organisational values? To what extent do professional groups follow the values of their profession rather than the value of the organisation?	To what extent do professional values facilitate/inspire to action and effort/direct attention? To what extent do professional values delimitate actions and effort?	Have there been recent changes with respect to professional values the presence of and weight on professional control?



Figure 5: A framework for studying design, use and time dimensions of cultural controls

Types of controls and control elements	Questions related to the dimensions of		
	Design	Use	Time
Planning	What types of plans are prepared? What do they focus on? Are the plans in line with objectives, vision, mission,.. statements?	Who participate in the preparation of plan(s) and how? How participate in evaluation of performance against plans, and how? Who participate in revisions and how?	When/how often is the plans prepared/ revised? How long is the planning horizon? When/how often is performance evaluated against the plan?
Budget	What types of budgets are prepared? Is/are the budget/-s coupled to plans, objectives,...? Who is responsible for the budget preparation?	Who participate in the preparation of the budget(s) and how? Who participate in the budget control, and how? Who participate in budget revisions and how?	How long is the budget horizon? How often is budget control carried out? How often do budget revisions take place?
Performance measurement	What types of measures/ measurement systems/evaluation processes do the organisation have? Are the measures coupled (causal related) to overriding objectives, plans and budgets? Are they KPIs?	Who participate in preparation of /changes in performance evaluation and measurement systems and processes, and how? Who participate in the discussion and interpretation of performance measures and other information for performance evaluation? To what extent are performance measurement and evaluation systems considered belief and boundary systems by employees and management?	How often are data and information collected? How often are measures prepared? How often/when are the measures presented? How updated are they when presented? When was the measurement system implemented, and whether the set of measures and indicators have been altered recently?
Rewards and compensations	What formal and/or informal rewards and compensation systems exists within the organisation? How are such systems coupled to other formal and/or informal controls?	Who participate in preparation/changes/target setting and use of rewards and compensations systems? To what extent do the systems communicate beliefs and boundaries?	When was these systems implemented and/or changed? How often do rewards and compensations take place/are carried out?

Figure 6: A framework for studying design, use and time dimensions of cultural controls

Questions related to:	Design	Use	Time
Organisational structure	How is employees organized into groups and hierarchies?	If the organisational structure has been altered recently, who participated in discussions and decisions?	When was the organisational structure altered?
Governance structure	How is/what characterize the governance structure?	If the governance structure has been altered recently, who participated in discussions and decisions?	When was the governance structure altered?
Policies and procedures	What types of policies and procedures exists within the organisation?	Do the different types mainly fit into the belief or boundary concepts? Are new or altered policies or procedures prepared/implemented in a diagnostic or interactive manner?	How often are policies and procedures put into attention and altered. When were they altered?

## Method and sample

What management controls schools and school authorities have, how and by whom they are prepared and used, why schools use their systems in the way they do, whether and how different types of controls supplement or substitute each other, and whether differences with respect to design and use of the management control system package might influence school performance are questions focused in the present study. These types of research questions, in symphony with the request for in depth knowledge and understanding of management control systems in schools and education and limited prior research in this field, calls for a case-study approach (Yin, 1994)

The research questions require some variation with respect to design and use of management control systems between the cases. Therefore, three municipal school administrations and six schools were selected for the study. To be able to also address whether and why schools operating under the same municipal control systems do not have and use the same internal control systems, two schools of similar size and having students with similar familiar background were selected from each municipality.

Municipality M1 is a rural, inland municipality. M1 has two primary schools (S11 and S12) and one lower secondary school. Municipality M2 is a medium sized city in the Norwegian context while M3 is a smaller city. All three municipalities are so called “two-level” municipalities having no organisational levels between the head teachers and the chief administrative officer. Nevertheless, there are differences between the three. In municipality M1 the head teachers report directly to the chief administrative officer, while in municipality M2 and M3 the head teachers report to a head of municipal school and childhood affairs in the chief administrative officer’s staff. In addition, Municipal M1 and M2 have one educational adviser in the municipal staff while M2 has a department for educational and childhood affairs with six employees. In all three Municipalities, the mayor and the majority in the municipal council are from the non-socialist parties. With respect to how the political work is organized, municipality M3 has a board (kommuneloven §10) for cultural, educational and childhood affairs, municipality M2 has a committee (kommuneloven, §10) for educational and childhood affairs, and municipal M1 has neither a committee nor a board for such affairs. In municipal M1 all cases related to educational affairs are passed in the municipal council.

The two smallest schools are the schools located in M1. These schools has respectively about 200 (S11) and 120 (S12) students . The two largest schools, S21 and S22, has about 500 students and the remaining two schools, S31 and S32 has respectively about 200 and 170 students. The two largest schools, S21 and S22, are combined primary and lower secondary schools teaching students at grade levels one to ten. The other four schools are primary schools teaching students at grade level one to seven

In each municipality, the head of municipal school affairs and the/an educational adviser where interviewed. In each school, the interviewees were the head teacher, or a temporarily appointed head teacher who use to be a deputy head teacher (S22 and S31), one or two deputy head teachers, one or two teachers and one or two assistants. The interviews were carried through as semi-structured interviews. The interview guide is attached in appendix X. The interview lasted from about 40 minutes to two hours. Notes were written during the interviews and with one exception, all

interviews were recorded. The table below gives an overview over the interviewees and how they will be referred to in the following.

**Table 1: Interviewees in schools and municipal school administrations**

Municipalities	Interviewees	Schools	Interviewees
M1	The chief administrative officer (and head of municipal school affairs)(rådmann) (M1c) 1 of 1 educational adviser (M1ea)	S11	The head teacher (S11h) The deputy head teacher (S11d) 1 Teacher (S11t) 1 Assistant (S11a)
		S12	The head teacher (S12H) 1 Teacher (S12T) 1 Assistant (S12A)
M2	The head of childhood and youth services (Kommunalsjef) (M2h) 1 of 3 educational advisers (M2ea)	S21	The head teacher, (S21h) 2 deputy head teachers, (S21d1 and S21d2) 2 Teachers, (S21t1 and S21t2) 2 Assistant (S21a1 and S21a2)
		S22	The temporarily appointed head teacher- a deputy head teacher (S22h) 2 deputy head teachers, (S22d1 and S22d2) 1 Teacher (S22t1)1 Assistant (S22A1 and S22a2)
3	The head of childhood and youth services (Kommunalsjef) (M3h), 1 of 1 educational adviser (M3ea)	S31	The temporarily appointed head teacher = a deputy head teacher (S31h) 1 Teacher (S31t) 1 Assistant (S31a)
		S32	The head teacher (S32h) The deputy head teacher (S31d) 1 Teacher (S31t) 1 Assistant (S31a)

## Management controls in schools and municipal school administrations

Norwegian primary and lower secondary schools operates under, and are controlled by, a common objective statement and common regulations given in law, regulations and curriculum. According to the overriding objective statement, schools should focus on learning and knowledge but also give student historical and cultural insight, increased knowledge and understanding of the national cultural heritage and the common international cultural tradition, cultural plurality and encourage democracy, equality, a scientific way of thinking and provide their student with a lot of other skills and attitudes.

In recent years the Ministry of education has introduced a school output control systems in terms of as set of national tests and a national Pupil Survey. The results from the tests and the survey, as well as exam results and term marks for students leaving lower secondary school, are published on a web site<sup>1</sup>. However, the results from the national tests are only published at a municipal level. In addition, a new curriculum for primary and secondary school, The Knowledge Promotion Reform, was implemented in (2006). Both the Knowledge Promotion Reform and the national tests have a strong focus on basics skills in reading, mathematics and English.

<sup>1</sup> Skoleporten.udir.no

## Cultural controls.

### Vision

Two of the municipalities have a vision for the municipal educational sector. For municipality M1 the vision is short and it is focusing on well-being, confidence, mastering and learning. The vision is the basis for an action plan called “action plan for wellbeing, confidence and learning” prepared mainly by school headmasters and the educational advisor, and discussed and passed in the municipal council. Municipality M3’s vision is long (147 words) and it highlights that the educational sector appreciates and encourages effort, respect, participation, contribution, curiosity, self-knowledge and seeks to create motivating learning environments and support left out students. Municipality M2 does not have a vision. When asked about a vision, the educational advisor referred to their strategic map focusing on overriding objectives and measures to be taken in order to achieve the objectives.

All six schools have a vision. The vision is published on the school web site. For four of the schools the vision is a short formulation easy to communicate to employees as well as to pupils, parents and other school stakeholders. For S31 and S32, the vision statements consist of respectively 198 and 487 words. School S11 has the same vision as the municipal level vision. As we can see from the table below, learning and knowledge are key concepts in three of the four short visions. School S12 focuses on proudness and growth and development within frames of confidence and the visions for the two schools in M3 focus on what might be seen as preconditions for learning in terms of processes, actions and school climate. They only touch upon school outcome in terms of student learning and knowledge.

Table 2: School level visions for four of the schools and central concepts mentioned in the S31 and S32 visions.

School	Vision/concepts and keywords mentioned in the visions
S11	«Sammen i trivsel og trygghet. Aktiv i læring og mestring.»
S12	«Vi er stolte av skolen vår og kjenner at vi hører til på en skule som har trygge rammer for vekst og utvikling.»
S21	«Mennesker i utvikling og samspill. Kunnskap, samarbeid og trivsel.»
S22	«Trivsel, læring, likeverd.»
S31	Trygge elever, engasjerte lærere og foreldre, gjensidig respekt, tett samarbeid hjem/skole, tydelige voksne – gode rollemodeller, tydelig fagmål, aktivt og godt læringsmiljø, stille krav og forventninger til elevene mht, fagmål og adferd, variert og engasjerende undervisning, Elevene: utfordret, opplever mestring, ...Gjøre elevene til selvstendige mennesker, elevene tar ansvar for egen læring, tilbakemeldinger, elevene blir sett og hørt, alle like viktige, stå for egne meninger, respekt for andres meninger, stolte av skolen, lyst til å lære, glede seg til videre skolegang,
S32	«Alle barn er alles barn». Trygghet, respekt, mange intelligenser, oppmuntre, sterke sider, ulike evner, talent, sterke sider. Varierte metoder, feedback, læringsstrategier => utvikle sterke sider og tro på seg selv gjennom å finne noe de kan lykkes i. Alle får kontinuerlig, ærlig og konstruktiv feedback for læring og utvikling. Utvikle til å ta lederansvar, Filosofiske samtaler om etiske spørsmål=> modne, moralske borgere. Undring, sette ord på tanker. Høy kvalitet på læringssituasjoner, nye impulser, faglig påfyll. Viktigste kjennetegn på kvalitet: høy trivsel og barn og voksne som gleder seg til å gå på skolen hver dag. Nytenkende og utviklingsorientert, alle viser omsorg og bryr seg om hverandre.

The role of vision and mission statements is to influence organizational values. To measure whether and how the visions influence organizational values are difficult, but whether or to what extent the respondents can replicate the vision might indicate whether the vision is assimilated in the organization.

In school S11, the head teacher (S11h) refers to *“trivsel, trygghet og læring”* and the action plan when asked about the vision. In addition he mentioned that he inherited the vision and the connection between the vision and the action plan that has been prepared together with the other head teachers and the educational advisor. When he were appointed as a head teacher about 2,5 years ago, he carried through a process in order to anchor the vision. The answers from the other respondents in school S11 indicate that the vision is known at least by the pedagogical employees. The deputy head teacher (S11d) mentioned *“trivsel trygghet og læring”* when talking about the action plan and the teacher (S11t) mentioned *“trivsel og læring”* when asked about objectives. The interviewed assistant (S11a) knew that the school has a vision, but she did not remember it.

When asked about the school’s vision, the head teacher (S12h) in school S12 answered *“Vi har en visjon om at alle skal oppleve mestring og at de skal få oppleve vekst og utvikling i trygge rammer – innenfor trygge rammer»*. She further told that the vision was prepared by the staff some years ago. The interviewed teacher referred to the vision as *“At vi har det bra, at vi viser respekt og at vi lager det slik at elevene opplever mestring»* (S12t). The assistant could not replicate the vision, but also she knew that it is about confidence. Both the teacher and the assistant referred to words or formulations from the vision when asked about school values and what characterizes the school.

In school S21, the vision was formulated about 7 years ago. The head teacher told that the vision, and their pedagogical platform and human resources responsibility platform, are regularly referred to in internal meetings. For instance, in terms of *“How is what we decided now related to the vision....”* (S21h) questions. However, when asked about the vision, the deputy head teacher for the primary school level referred only to the first part of it and answered: *«vi har jo visjonen vår, som går på dette med menneskesynet, at alle er like mye verd og muligheter til å utvikle seg og det med tillit og respekt. Det er da menneskesynet, eller elevsynet, og visjonen den heter mennesker i utvikling og samspill»*. Sshe continued: *«Det er klart at det er jo mye fokus på det faglige, og det skal det være, men vi må ikke miste den andre biten. At en bygger hele mennesket.»* (S21d1). The interviewed primary school teacher did not remember the vision, while the primary school assistant looked for a poster on the walls and said *“it should be some place here”*. When asked about whether the vision is pointed to in meetings and other occasions, she said *“Det gjør de nok. Men nå er jo ikke vi assistenter så mye med på møter og sånn her»* (S21a1).

By accident, no direct questions concerning the vision were asked to the lower secondary school teacher (S21t2) and deputy head teacher (S21d2), and none of them referred to the vision or formulations from the vision, when asked about school characteristics and school objectives or in other situations during the interviews. The lower secondary school assistant (S21a2) knew that the school has a vision, but he could not refer to any formulations or keywords from it.

In the other school in municipality M2 the vision consist of three words; *“Trivsel, læring, likeverd”*. According to the deputy head teacher for the lower secondary school department (S22d2), the vision was designed by the lower secondary school employees in the 1990s, before the former primary and lower secondary schools merged. According to her, what is going on inside the school reflects the

vision, but also she also admitted that: *“visjonen har vært der, men den har på en måte vært for lite blitt tatt tak i så at alle allikevel har et forhold til at dette er et mål.»* Even if the vision stems from the former lower secondary school, both the interviewed teacher (S22t1) and assistant from the primary school level (S22a1) came up with the formulation as soon as they were asked. The teacher (S22t1) told that the vision was designed, as a common basis for the future, when the two schools were merged. Also the deputy head teacher for the primary school (S22d1) came up with the vision when asked, and continued *“Den tror jeg sitter i panna (10:47) hos de fleste”* (S22d1).

Opposed to the primary school employees, the temporarily appointed head teacher (S22h) had to think it over for a while before he came up with the vision, and he admitted that *“Det er ikke sånn som jeg på en måte svelget med en gang og tenkte at det var en kjempegod visjon. Så en er vel ikke – den er vel ikke «min» sånn sett. Den har ikke vært kommunisert noe voldsomt ut heller. .... Ja likeverd er jo noe som – nei, altså, den brukes ikke i noen sammenhenger sånn.”* (S22h) The fact that the temporarily appointed headmaster has been at the school only for about 3 years, while the other primary school employees have been at the school for more than 10 years, indicate that the vision has played a more important role some years ago. All respondents from this school used the questions about the vision as an opportunity to tell about a school-wide project called PALS. The project focuses on how positive student behavior could be strengthened by use of positive feedback and rewards during the school day.

School S31 is coupled to an international school development program (network). As a part of this program, a vision was formulated about five years ago as a result of a process involving school employees, parents and politicians. All three interviewees from the school were able to give an account of some of the elements in the vision and all of them told how it came about.

School S32 participate in the same network as school S31, and also for school S32 the vision is a result of a process about 5 years ago involving all employees. The head teacher referred to the process and the vision as *«Det som skjedde var at vi utarbeidet en visjon som gud og hvermann etter hvert gjør”* (S32h), the deputy head teacher (S32d) referred to the vision and the process leading up to it with more enthusiasm. He highlighted that *«det overordnede det er skolen sin visjon. Og den bærer preg av at vi ser hele eleven»*, and the fact that if the vision should influence actions and efforts, the mental models of the individual employee have to be altered. Also the assistant (S32a) and the teacher (S32t) referred to the vision as an important element in the school, although the assistant said: *«...men så tenker jeg også at hverdagen må på en måte ikke forsvinne vekk i visjonen. .... Vi må ikke være så opptatt av at alt skal være så flott og voldsomt at vi av og til glemmer de dagligdagse tingene»* (S32a).

Table 3: Vision – an overview

	S11	S12	S21	S22	S31	S32
	«Sammen i trivsel og trygghet. Aktiv i læring og mestring.»		Strategic map		The educational sector appreciates and encourages effort, respect, participation, contribution, curiosity, self-knowledge and seeks to create motivating learning environments and support left out students (147 words)	
The vision/vision keywords	«Sammen i trivsel og trygghet. Aktiv i læring og mestring.»	«Vi er stolte av skolen vår og kjenner at vi hører til på en skule som har trygge rammer for vekst og utvikling.»	«Mennesker i utvikling og samspill. Kunnskap, samarbeid og trivsel.»	«Trivsel, læring, likeverd»	Trygge elever, engasjerte lærere og foreldre, gjensidig respekt, tett samarbeid hjem/skole, tydelige voksne – gode rollemodeller, tydelig fagmål, aktivt og godt læringsmiljø, ++ (198 words)	«Alle barn er alles barn». Trygghet, respekt, mange intelligenser, oppmuntre, sterke sider, ulike evner, talent, sterke sider. ++ (487 words)
Came about when?	3-5 years ago	Some years ago	about 7 years ago	in the 1990s	About 5 years ago	5 years ago
Who participated?	Educational adviser, school head teachers	The staff		The staff in the former lower secondary school	All employees, some parents ++	All employees, some parents ++
Known by the other interviewees than the head teacher?	Yes: S11t and S11d	Yes, they know some of it	Yes: S21d1	Yes. S22t1, S22d1 and S22a1. Not the head teacher	Yes, both interviewees	Yes, all mention at least some of the vision
Brought into attention when/how often?						

### School characteristics – school values/culture

In order to get a first impression of the school and the school culture, all respondents were asked the same question before any other questions were asked; “what characterizes your schools”.

To this question the school S11 head teacher replied: «Dyktige lærere, positive lærere, og samarbeidsvillige lærere, veldig god stemning på huset her», “Veldig driv i personalet. Stort engasjement. Stiller krav til rektor. De ønsker pedagogiske diskusjoner.»(S11h) He also mentioned that the school lacked structure and systems when he arrived about three years ago, that they did not have common goals and direction in their work, and that he has implemented student performance control systems and bought technical equipment such as smart boards. The other S11 interviewees’ focused on the good social climate both among employees and students, their cooperation, and the good internal leadership. The deputy head teacher (S11d) also mentioned the lack of male teachers.

According to the head teacher (S21h), the focus on the individual student and the wish that each student should be seen and met at his/her level, characterizes the school S12 culture. The interviewed teacher (S12t) and assistant (S21a) mentioned the high level of employee well-being as a main characteristic. In addition, the teacher expressed that the individual student, and what is to the best for the student, is not always focused; «*Av og til så gjør vi det som er mest lettvisst for læreren*» (S12t). She also mentioned that there exists an internal push for improvement, but that the school lacks capacity and has limitations with respect to what is possible to achieve.

Opposed to (most of) the other interviewees, the head teacher in school S21 focused strongly on student achievements, how student test results are analyzed and discussed internally and how they discuss how to improve their achievements. He also mentioned the National Pupil Survey and their local survey on bullying, their good cooperation with the local Parents' Working Committee, that the school is well functioning, having good systems and high level of employee well-being. Also the interviewed employees focused on close cooperation, high degree of well-being, cooperation in their work towards a common goal and their focus on the individual student. One of them mentioned that «*De har ikke så store ambisjoner mange, verken elever eller foreldre.... Selvfølgelig er det også de ressurssterke hjemmene, men jeg føler at generelt sett, at gjennomsnittlig så er forventningene for lave.*» (S21d2) and one mentioned the increased focus on learning in recent years: «*Den (learning) skal jo være i fokus, men jeg tror nok kanskje at vi er blitt litt mer bevisst på det de siste årene at for 10 år siden var vi kanskje litt mer opptatt av at ungene skulle ha det «gildt»*» (S21t1).

When asked about school characteristics, the temporarily appointed head teacher in school S22 replied that school S22 is a «*veldig inkluderende skole, en raus skole, mange dyktige pedagoger, men stor og vanskelig å ha den fullstendig oversikt over som leder*» (S22h). The deputy head teacher mentioned «*God stemning, godt humør og det virker som det er lett å kommunisere på tvers av alle nivåer. Vi er på god vei til å bli en samlet skole*» (S22d1) and «*Det vil jeg si er ivaretagelse av elever og åpenhet*» (S22d2) The teacher and the assistant also emphasised the cultural diversity; «*Vi er en skole med mye mangfold. Har mange elever fra andre land, og vi er en skole med – hvor vi prøver å få frem det mangfoldet. Og så er vi en skole med veldig stabilt personale. Det er mye humor i personalet. Det er mye godt samhold.*» (S22t1) «*Ja, en god plass å jobbe, en inkluderende skole, en skole med mange nasjonaliteter, mange dyktige medarbeidere*» (S22a1)

In school S31 the temporarily appointed head teacher characterized the school as a «*we-school*» having a high level of tolerance with respect to teaching methods and being «*Gode på konfliktløsning og slikt noe. Det er lite konflikter ute blant elevene*» (S31h). The teacher (S31t) highlighted «*eleven i sentrum*», «*philosophy for children*» and the school-home cooperation (S31t) while the assistant replied «*Det er stor takhøyde, og så er det masse fantastisk flinke folk og så har vi mange kjekke elever her. spennende.*» (S31a) when asked about school characteristics.

According to the school 32 head teacher has «*... vi får vel kalle de en tradisjon for å være nyskapende! ... Relativt lite engstelige for å prøve nye ting og slik jeg oppfatter det, et kompetent personale på alle nivå. Lojalt, veldig godt arbeidsmiljø. Lite regelorientert*» (S32h). The deputy head teacher (S31d) added employee participation as a central school characteristic; «*Vi har veldig lite tro på top-down-prosesser*», and the social climate as important school characteristics. Further, he mentioned their focus at «*hele eleven*». The assistant (S32a) put weight on the cooperation between the kindergarten, the school, and SFO, that all employees have been involved in internal processes



independent of position. The teacher (S32t) was more critical. She mentioned that the school is messy – a lot of things are left in rooms and corridors, and she mentioned that the employees have the right to be heard or participate in discussions and decisions, but that this is an “in theory” right.

The school S32 head teacher also told that they are influenced by Howard Gardener’s theory on multiple intelligences (referanse) and he stated that *“Det er ikke sånn at det er et manisk styringsprinsipp, men som en tommelfingerregel at la oss nå huske på at det finnes mange forskjellige egenskaper og legninger som barn skal ha og som voksne har, og det må en ta hensyn til. En liten motvekt til Kristin Clemet og Høyre og nå SV og hele det politiske sitt maniske forhold til testing og grunnleggende ferdigheter og sånt. Det finnes mange grunnleggende ferdigheter som ikke lar seg måle i nasjonale prøver for eksempel.»* This scepticism against testing was also expressed by the deputy head teacher; *“Jeg må si at jeg er litt skeptisk til den bølgen som nå skyller inn over landet i forhold til dette med testing. Altså et voldsomt fokus på testing. Vi prøver å ikke ha det... men vi ønsker ikke et veldig fokus på testene selv om vi sier at det er klart at basiskunnskapene er viktig. Men det er så mye mer i en skole enn bare disse basiskunnskapene og bare dyrke fram dem.»*

**Table 4: visions vs. reported school characteristics**

	<b>S11</b>	<b>S12</b>	<b>S21</b>	<b>S22</b>	<b>S31</b>	<b>S32</b>
The vision/vision keywords	«Sammen i trivsel og trygghet. Aktiv i læring og mestring.»	«Vi er stolte av skolen vår og kjenner at vi hører til på en skule som har trygge rammer for vekst og utvikling.»	«Mennesker i utvikling og samspill. Kunnskap, samarbeid og trivsel.»	«Trivsel, læring, likeverd.»	Trygge elever, engasjerte lærere og foreldre, gjensidig respekt, tett samarbeid hjem/skole, tydelige voksne – gode rollemodeller, tydelig fagmål, aktivt og godt læringsmiljø, ++ (198 words)	«Alle barn er alles barn». Trygghet, respekt, mange intelligenser, oppmuntre, sterke sider, ulike evner, talent, sterke sider. ++ (487 words)
School characteristics – main impression	Well-being. increasing focus on student performance measurement systems and upgrading of technical equipment	Well-being, Focus on the individual student.	Well-being Learning-focused. Intensive(?) use of performance measurement	Samhold dyktige medarbeidere mye humor På vei til å bli én skole Vanskelig å ha oversikt	«vi-skole», gode på konfliktløsning eleven i sentrum, filosofi for barn, stor takhøyde, flinke folk og kjekke elever.	Kompetent personale, lite regelorientert, god trivsel, rotete, «alle barn er alles barn», mange intelligenser, skepsis mot målesystemer

### Organisational culture and clan/professional control

Clan and professional control refers to the mechanisms in action when individual and/or group behaviour and effort are influenced (controlled) by respectively the informal social structures and the common understanding of values and boundaries the employees are socialised into when entering the organisation control/influence or during their education (Ouchi, 1979)(Malmi & Brown, 2008).

Most Norwegian teachers have their education either from a teachers college or they hold a university degree and have additional pedagogical education and training. In primary schools, teachers college is the normal education for the teacher while the proportion of teachers holding a university degree in general is some larger in the lower secondary schools (må finne referanse til dette hvis det skal være med). Both types of teachers are socialized into their professional culture during their education and it is reasonable to assume that the professional control mechanisms in schools are strong. However, over years the professional values and beliefs might change and local school cultures might emerge. The answers to the school characteristics question indicate that the working environment is great in the six schools. However, they also indicate some differences in school culture with possible consequences for the clan/professional control mechanisms.

It is striking that only three of the six school visions focus on the result of schooling; learning or knowledge and that only a few of the 32 respondents mentioned learning focused or a similar concept as a school characteristic. Only in school S11 and S21 one or two of the respondents mentioned focus on learning and/or student performance. In some of the last interviews the respondents were asked why they and others did not mention knowledge and/or learning focus as important school characteristics even if learning and knowledge are main school outputs One of them answered «Fordi at det er så selvfølgelig tror jeg. Det er en så selvfølgelig del av «elevene i fokus»» (S31t) and another said «Jeg tenker jo at det er jo det som er jobben våres. Vi skal jo ha fokus på læring. Men hvorfor skal vi si at vi skal ha fokus på læring når det er det som er jobben vår?» (S31h).

### Objectives/targets and planning/plans

The educational law, the Knowledge Promoting Reform, other types of regulations and control systems and local visions contains and communicate overriding school objectives to school employees and other school stakeholders. In addition, the local school might make their own strategic choices both with respect to what objectives to be focuses in the coming period of time, and with respect to whether the objectives should be stated in measureable terms as specific targets to be met. In addition, they might prepare their own plan or strategy to achieve their local objectives or targets, and often objectives and targets are presented in the plan(s).

All Norwegian municipalities should have a long range plan (Plan- og bygningsloven) and each year all municipalities should prepare an action program, including budgets for the next four years (Kommuneloven). In this action program, some municipalities include an action program for the municipal school sector and/or for each school. The municipalities might also choose to prepare a separate plan of action for the school sector and the schools might prepare their own local plan/-s.

#### Municipality M1

In municipality M1 the schools and the educational advisor have prepared an action plan for well-being, confidence and learning in primary and lower secondary schools. The plan is discussed and passed in the municipal council and the planning horizon is five years, from 2010 to 2015. The

objectives in the plan is presented as core values; openness, confidence, development and engagement.

The municipal long range plan does not have a separate chapter focusing on education or school affairs, but to get more young people to attend and finish higher education is mentioned as one of several challenges for the future. The yearly action program has neither a separate section focusing on schools and education, nor separate sections for each school. Specific projects or actions requiring additional resources are mentioned.

When asked about objectives, both the chief administrative officer and the educational advisor mentioned that it is an objective that *«elevene skal ligge over landsgjennomsnittet»* (M1ea) on the national tests.

When asked about objectives at the school level, the head teacher in school S11 responded *“Målsetningen er jo å gi alle elevene et best mulig undervisningstilbud der de er da”* (S11h), and he then referred to the action plan for well-being, confidence and learning. When asked whether the school has specific targets with respect to student achievements and learning, the interviewed deputy head teacher answered *“no”* (S11d). The teacher answered *“Nei, det tror jeg ikke. Der tror jeg det er kunnskapsløftet vi styrer etter. Ellers så vet jeg at det er et uttalt mål i kommunen at elevene skal svømme ved utgangen av 4. klasse.»* (S11t) and the assistant did not know about specific objectives or targets beyond the vision. When asked about plans and planning, the respondents told about plans related to the teaching activities such as week plans and annual plans per class and subject. They also referred to a plan against bullying and an annual cycle.

In school M12, the situation was about the same. When asked about common objectives and values the teacher answered *“Nei, da svarer jeg at sånn i utgangspunktet så er det skolens visjon. At vi har det bra, at vi viser respekt og at vi lager det slik at elevene opplever mestring»* (S12t) and the assistant answered *«Ja, det er jo at en skal ha trygghet og gode rammer her på skolen alt i fra et en skal unngå mobbing til fellesskap, felles på det at barn og voksne har felles aktiviteter – aktivitetsdager og ting og tang en gjør da som gjør at det blir fellesskap»* (S12a). With respect to plans and planning, the head teacher referred to the municipal action plan and the other types of plans also mentioned for school S11.

### *Municipality M2*

The municipal long range plan for 2011 to 2021 for municipality M2 presents 6 overriding objectives for the knowledge society. These objectives are followed up in the municipal action program and specific targets and actions for each overriding objective for the coming year are presented. That the average exam result in mathematics should be 3.1 in 2013 and that the student satisfaction with teachers' supervision and feedback should be 3.4 are examples of specific targets, while a continuous emphasis on learning focused assessment (assessment for learning) is an example of actions mentioned in the program. The municipal action program also presents a short term action program for each school containing objectives, actions and specific targets for the school. The performance measures are the same as for the municipal as such, but the targets might differ between schools due to local conditions.

When asked about a school sector vision, the head of municipal childhood and youth services in municipality M2 referred to the strategic map for the school sector. The map contains 15 objective formulations split into four categories; three concerning learning and childhood environment, three concerning academic progress, five concerning social skills and four concerning cooperation between home and the school. Two to six actions are mentioned for each objective category. Although it is possible to see a link between the objectives in the strategic map and the mentioned plans, there is no direct correspondence between the objectives in the plans and the map.

When asked about objectives and planning, the school S21 head teacher told about the school level action program, and he also mentioned that the performance indicators do not capture all important school objectives. The action program and the performance indicators and targets are known by the deputy head teacher and the teacher from the lower secondary school department. The teacher mentioned that *“Hvert trinn, eller hvert fag, har satt målsetninger for karaktersnitt for eksempel. Det har vi – hva gjennomsnittskarakteren skal være»* (s21t2). She also told that the targets are hanging on the staff room wall. The interviewed primary school employees and the lower secondary school assistant seemed to know neither the action program nor any objectives or targets.

When asked about school level objectives, none of the interviewees in school S22 mentioned the objectives and targets in the school action program. The temporarily appointed head teacher twisted the focus towards a local project on behavior and how to support positive behavior (PALS). However, he mentioned the targets when asked about performance evaluation. The other interviewees did not tell about objective formulations and targets when asked about school level objectives. However, one of the interviewees knew that the head teacher send something to the municipal level: *“Altså rektor lager noen visjoner på – som han sender videre til ledelsen i kommunen om at vi skal ha – vi skal heve oss på nasjonale prøver, få flere elever opp på nivå fem og vi skal ha null toleranse på mobbing og vi skal – altså, det ligger noen planer på det. Men de ligger nok mest på administrasjonsnivå på ett vis. Altså, akkurat de der tallene på hvor vi skal ligge»* (S22t1), and she confirmed that these issues have not been discussed in the staff. The general impression is that the action program for the school is not known among the employees, and that other types of school level planning is absent. The word “planning” seemed to give associations to a local plan against bullying, and plans for teaching activities such as week plans and plans for longer periods of time.

### *Municipality M3*

In municipality M3 the head of childhood and youth services told that *«sektor skoler har da et eget kapittel i det handlingsprogrammet. Men i tillegg så har også hver enkelt skole sin del av handlingsprogrammet som de skal utarbeide med mål, tiltak, kompetanseutvikling – ja. Som de viktigste temaene»* (M3h). The school section in the action program sums up resources used, recent national test results and some other statistic. Areas of priority are described but without specific objectives or targets. In addition to the yearly action programs, the municipality as prepared a long term action plan for childhood and youth services. The section called visions and objectives presents the municipal vision for the sector and the planned actions.

In school S31's section in the municipal action program, school objectives and actions are presented in general terms. No objectives are presented as performance indicators and specific targets. When

asked about school objectives, the temporarily appointed head teacher referred to the vision, and the interviewed teacher and assistant did not add anything. The temporarily appointed head teacher told that this action program is not communicated to the school staff. No school level action plan is prepared except an annual circle for all types of events and activities for the school year (S31a).

In school S32's section in the municipal action program, four objectives are mentioned; to intensify the learning environment work, to keep up the workplace environment, to increase the quality and the standing (status) of the school library and revitalize and anchor the work with the plural intelligences and philosophy. In addition, actions to achieve the objectives are mentioned.

When asked about school objectives, the head teacher referred to the school development program and how the staff agreed upon focus areas/projects for the school; for instance feedback, philosophy for children, and multiple intelligences. Also the other interviewees referred to the vision when asked about school objectives.

### *All schools*

In all six schools leaders and other employees tell about week plans, annual plans and other types of plans prepared per subject or class. However, there are some differences with respect to whether the head teacher or a deputy head teacher control that the teachers prepares such plans as they should. Mer

In all six schools the employees tell about week plans, semester plans and annual plans containing objectives for each subject and period of time. In school S11 the head teacher told «*Det jeg opplevde kanskje var litt rart da jeg kom var at det ikke var så mye struktur på ting i forhold til å dra i samme retning. I forhold til ukeplaner, årsplaner, og veldig ulikt. Folk jobbet veldig mye hver for seg. Det vi har jobbet med noen år nå da er å strukturere ting litt mer slik at vi har en retning og et mål på ting nå og det vi holder på med.*» (S11h).

In school S21 the deputy head masters report they have to follow up the teachers at this matter and control that the required plans are prepared; «*Jeg har tatt opp på noen møter at det var ikke i den eller den klasse n og at dette er for dårlig- eller at dette var veldig bra. At jeg har sett på det og at det var noe i hvert eneste fag. ... Ja, at det står noe i hvert fag. Har de ikke noe å jobbe med så skal det i alle fall stå at vi jobber med et prosjekt, at vi jobber med det på skolen at .. det skal stå noe*» (S21d2); «*En går jo ut i fra at alle lærerne lager en halvårsplan eller en emneplan, men her har jeg frister for når de skal leveres inn. Jeg vil ha dem, og jeg printer dem ut, og etterspør når de ikke er kommet inn*» (S21d1). Also in school S22 there are time limits with respect to preparation of semester plans «*De må innen visse datoer både i august og i januar, nesten med en gang skolen begynner. Da skal de være ferdige, og jeg sjekker at de er det. De skal også legges sånn at de er tilgjengelige for elever og foreldre. Det samme skjer med ukeleksene. Ukeleksene skal ut – de skal samtidig rett ut til elevene sånn at – så det er bare å trykke på en knapp for meg så ser jeg at... » (S22d2)*

In S31 and S32 these types of plans seem to be a routine; «*Det er så innarbeidet at det går av seg selv. Og det er tilpasset plan i forhold til de elevene som trenger det. (18:41) ja, det er det. Det er ren rutine*» (S31h); «*De gjør det. Det blir gjort. Uten at vi har vært så spesielt strenge med det, men det går i ukeplan, og det fungerer bra for noen barn og det fungerer dårlig for andre selvfølgelig*» (S32h).

**Table 5: Plans and plan content, school and municipal level**

	M1		M2		M3	
	S11	S12	S21	S22	S31	S32
School section in long term municipal plan?	No		Yes One chapter (4 pages) about the knowledge society		Yes?	
Objectives in long term municipal plan	No		Yes, presenting objectives and actions			
Long term plan for school/childhood?	Yes plan for well-being, confidence and learning 2010-2015 (plan for childhood and youth services)		No		Yes Plan for childhood and youth services (2011-2020)	
Objectives in long term plan for school/childhood?	In terms of focus areas: openness, confidence, development and engagement.		Yes		???	
Separate school/education section in 4 year municipal action plan?	No		Yes		Yes	
	No	No	Yes	Yes	Yes	Yes
Objectives in 4 year municipal action program?	Yes		Yes/Some?		Yes	
	Yes	Yes	Yes/Some?	Yes/Some?	Yes	Yes
Output targets in 4 year municipal action program?	No		Yes		No	
	No	No	Yes	Yes	No	No
Plans for subject and/or class/group per week/longer period of time?	Yes	Yes	Yes	Yes	Yes	Yes

### Budget and budgeting

All three municipalities use devolved financial management, but how the individual school’s budget is estimated is some different. In the small municipality, each school’s budget is based on present year’s budget and changes in the number of student and classes. Occasionally, changes in student special needs and specific school projects are taken into consideration. Based on these factors, the head masters participate in discussions and negotiations with the chief administrative officer, chief accountant and heads of the other municipal public services. The chief administrative officer and the chief accountant conclude and prepare a budget proposal for the municipal council.

In M2 the head of municipal childhood and youth services get a total budget from the chief administrative officer. Most of this budget is allocated to the individual school according to a mathematical model. The model takes into account the number of student and classes in each school and some socio-economic factors for each school district. The result for each school is presented for and passed by the municipal council.

Municipal M3 use a similar model as M1; the budget for next year is based on the budget for the present year adjusted for changes in the number of students and classes and some other factors. However, this municipality has realized that their model has caused undesirable variance between

schools, and they are now looking for a more “objective” model for estimation of the individual school’s budget.

At the school level, the main impression from the interviewees in all schools is that budgeting at the school level is a task for the head master, that almost all money is spent on fixed wages, and that there are few if any internal discussions with respect to how the money should be used. In municipal M1 and M3 the interviewees report that they do not have a feeling scarce resources; *«Jeg synes ikke at det er så veldig stort fokus på pengene på den måten at man ikke må bruke pengene»* (S11d). This has also been the situation in the M2 schools, but a recent municipal budget deficit has led to cut in the school budgets.

### Time scheduling

Time scheduling is budgeting with the most important resource in schools; time. It is about how scarce time-resources are allocated to different tasks and groups, and how absolute and comparative advantages are utilized. The time scheduling process follows the same main track in all the six schools. It starts with the appraisal interview in the winter in which one issue is to clarify the individual employee’s expectations, wishes and boundaries for the next school year. Then the head master, or the deputy head master for school S21 and S22, decide who should be the team leaders and the contact teachers for each class or group for the next school year and prepare a time schedule proposal. In school S11, S12, and S22, and in the lower secondary school department in school S21, the head master/deputy head master prepare a detailed time schedule were lessons in all subjects are placed on the schedule. Within the first part of June, a first draft for the time schedule is presented for the staff, and adjustments are made. In school S31, S32 and the primary school department in S21, a resource in terms of teacher work hours is allocated to each grade level. Then the teachers discuss and agree upon how the students and teaching should be organized and they prepare a time schedule for themselves and the students. However, some lessons are placed on the time schedule by the (deputy) head master due to needs for coordination across grade levels.

Table 6: Budgeting and time-scheduling

	M1		M2		M3	
	S11	S12	S21	S22	S31	S32
Devolved financial management in schools?	Yes		Yes		Yes	
Municipal school budgeting	Adjustment/negotiations based on present budget		Mathematical model		Adjustment/negotiations based on present budget	
School level budgeting	Head master	Head master	Head master	Head master	Head master	Head master
Time scheduling (“detailed” = the head teacher/deputy head teacher prepare a detailed time schedule for all classes, subjects and teachers.)	Detailed	Detailed	Primary school: pool of resources allocated to each grade level Lower secondary school: detailed	Detailed	Pool of resources allocated to each grade level	pool of resources allocated to each grade level

## Performance measurement and evaluation.

### *Services delivered*

In the present paper, performance measurement and evaluation focuses mainly on output control. However, what is school output? Normally, school production process studies use student performance as school output measures (e.g. Hanushek, 1986, 1997; Hanushek & Welsh, 2006). However, the delivered services in terms of lessons and other services might also be considered school output. Regulations from the ministry of education (**finn referanse til rundskrivet**) states how many lessons per subject and in total the students minimum should have during primary and lower secondary school. An interesting question in a study of management control systems in schools is whether and how schools control that their students get the number of lessons they should.

With respect to this matter, the interviews revealed that the three municipal school authorities do not have any kind of formal control systems for this purpose. The interviews at the school level left the same impression. It is up to the head teacher, the deputy head teacher, the individual teacher and/or the teachers at each grade level to control to follow these regulations when preparing the time schedule. None of the schools have any form of ex post control with respect to this matter. However, in all schools interviewees report that to take a lesson off is not accepted. Consequently, this matter seems to be regulated by clan/professional control.

### *Student performance*

Schools have tradition for performance measurement, evaluation and feedback at the student and class level. In five of the six schools, one or several interviewees talked about “assessment for learning”, which is a methodology for systematic feedback and help for further learning to students and their parents introduced by the Norwegian Directorate for Education and Training.

In the lower secondary schools, term marks and exam results are traditional school output/performance measures and in recent years these has been supplemented by results from the compulsory national tests and the National Pupil Survey. In addition, the schools can use other types of tests and surveys. The compulsory survey and tests provide schools with a lot of information that might be useful for evaluation of and reflections on school teaching. However, a prior study indicates limited use of available student performance measures and some focus on and use of results from the National Pupil Survey (Friestad, 2008).

All six schools in the present study discuss the results from the national tests internally, but here are differences between them with respect to how the tests are considered and how the test results are used. In school S11 the head teacher presents the test results in a staff meeting and he told that the deputy head teacher "*jobber seg gjennom da for å finne hvor vi må sette inn innsatsen. På om det er noe system på hva vi ikke mestrer og hva vi er gode på.*" (S11h). The interviews indicate that whether the test results should result in altered activities and/or teaching practices is up to the individual



teachers.. «Det blir jo diskutert på det personalmøtet hvor man har det oppe. Men hva 5. 6. og 7. gjør med det det er jeg litt usikker på rett og slett» (S11t).

The head teacher expressed some uncertainty with respect to how he should use the tests results indicating some skepticism or even resistance to an intensive focus on and use of the tests. He said: «Vi har også drøftet resultatene og vi ser at vi har en vei å gå i forhold til NP. Vi lurer jo på hvordan vi skal gripe det an og det er jo en balanse det også. Skal vi la NP styre alt eller? Men vi ser jo at det er et verktøy for politikerne for å «måle» skolen og så kan man være uenig eller enig om det er et bra verktøy, men det er nå det som blir gjort. Det blir kommunisert inn i kommunestyret, spesielt det kommunestyret som er nå er interessert i resultatene, og det skjønner jeg jo.» (S11h). Also the teacher expressed some skepticism and resistance to possible consequences of a too heavy focus on the tests: «Det er snakk om å drille til nasjonale prøver og den typen ting. Det diskuteres jo om over hele linja sikkert, og jeg er fryktelig i mot det. Det har jeg sagt høyt og hardt på et personalmøte, og jeg har ikke lyst til å være med på den galoppen der. Jeg føler at det vi gjør i klassen må holde for nasjonale prøver og hvis vi skal begynne å drille alle elevene så vil jo alle høyne nivået og da blir en jo ikke noe bedre uansett. Jeg skjønner ikke hele greia. Det må ligge i bunnen av undervisninga det vi gjør tenker jeg i forhold til NP» (S11t) The same teacher were also concerned with how this focus on test results influences teacher motivation negatively; «Og jeg vet at det er noen som sier at de ikke har lyst til å begynne med første klasse og ha dem for 1. til 4. for de tar det kanskje personlig når de nasjonale prøvene kommer. Og det er klart en kjenner jo litt på det» (S11t). But she also mentioned that the test results have potensial positive effects for the teachers; «Altså, nå i disse nasjonale prøver tidene så vil jeg jo tro at hvis det er en klasse som klarer å få gode resultater på nasjonale prøver så hadde nok det vært en form for at en hadde fått aksept for da har du faktisk lykkes med noe» (S11t).

Both the head teacher and the deputy head teacher in school S11 told about a strong focus on the national tests from the local politicians. «Ja, det er et veldig fokus fra politikerne. Et veldig fokus. Skolerådgiveren må jo hvert år levere en sånn tilstandsrapport for grunnskolen som legges frem i kommunestyret, men der legges det ikke frem for den enkelte skoler. Det er slik gjennomiktig.... Så resultatene blir slått sammen og delt ut og da kommer vi heldigere ut i år, men altså det er et veldig fokus, et politikerfokus. Det blåser en blå vind gjennom bygda her. Og det er veldig tydelig i måling, oppnåelse av mål og at det skal settes mål. At det på en måte kostnad/nytte, at det er kostnadsbesparende, det er rett og slett kost/nytte prinsippet som blåser nå» (S11d).

With respect to the national test results, the head teacher in S12 reported «Så har vi nasjonale prøver. De går jeg gjennom først med den som er kontaktlærer, så i plangruppe og så med hele personalet». The teacher told that there has been an increased focus on the test results and the responsibility of all teachers with respect to the national tests; : «Ja, mer og mer. Både type oppgave og begrep som er tatt med og hvilke fag som er involvert i de ulike typene oppgaver for å ansvarliggjøre alle lærere. Det er ikke norsklæreren, det er ikke kontaktlæreren men det er alle lærerne» (S12t). However, she also said «De er gjennomgått, men det er opp til den enkelte lærer hva du gjør med det i klassen» (S12t). The assistant reported that she, and probably also the other assistants, are not involved in the national tests.

The head teacher further told about other types of tests and that the individual student's results on these tests are used not only by the individual teacher; «Andre tester og prøver som vi vektlegger en

*god del er de nasjonale kartleggingsprøvene i 1. til 3. klasse. Det er jo en helt annen type prøve enn nasjonale prøver, men at vi går gjennom de for å se de som da skårer såpass at de er under bekymringsgrense eller at det er veldig ulikheter i de ulike testene. Det å ha analyseferdigheter på disse prøvene tror jeg er litt viktig, og jeg prøver å engasjere med da. Spesped koordinatør er noe inn, og kontaktlærer, og slik at vi faktisk ser på hver enkelt elev.» (S12h)*

In school S21 the national test results are analyzed by the head master and discussed in detail in staff meetings with respectively the primary school staff and the lower secondary school staff. The teachers get a copy of the tests and for each question in the test the proportion of correct answers are analyzed and coded with a color code from green, via yellow to red based on the proportion of correct answers. The questions having a yellow code are considered to represent areas with the highest possibility for improvement for most students. The staff discusses and decides on actions to be taken in order to improve student performance in these areas. According to the primary school deputy head teacher *“For noen av lærerne var det litt aha-opplevelse å virkelig å se hvor vanskelig det var disse prøvene»*. They realized that they had to inform the parents at the fourth grade what are expected of the students at grade five; *«Så det er også noe som er kommet ut av dette. Vi må faktisk presentere prøvene tidlig på høsten da på fjerde trinn for foreldrene så de ser hva som forventes av elevene da på femte trinn»*(S21t1)

In addition to the discussions in staff meetings, in the lower secondary school, the individual student's results are discussed by the teachers at the actual grade level; *« For eksempel nå, ved de nasjonale prøvene, så tok de inn på hver enkelt elev og hva de har problemer med og analyserte og jobbet med hva det var mest fokus på – hva var problemene. Altså. De jobber med det på trinnet og ser helt konkret hva var problemet vi må jobbe med.»* (S21d2). In the primary school the individual student's scores at the national tests, other tests and results from internal systems used to control the individual student's level and progression in reading are discussed with **trinnleder, helsesøster, spesped-koordinator and kontaktlærer**; *«Da har vi et møte hvor vi ser på – hvor vi går i gjennom og ser på resultatene og da spør vi er det noen du er overasket over og hvem har overasket positivt og hvem har overasket negativt? Og så sammenligner en og ser på prøver og tester de har hatt tidligere og da går en nærmere inn på hver enkelt elev. Da gjør jeg det samlet med dem.»* (S21d1). However, according to the interviewed primary school teacher, these procedures differ between subjects and grade levels. For instance, with reference to local tests in mathematics at grade five to seven the teacher said *«så er det litt overlatt til den enkelte av oss hvordan vi velger å fange opp det som ungene kan og ikke kan»* (S21t1)

The lower secondary school teacher gave an example of how they have used the test results. *“Ja, vi har faktisk, akkurat med vårt kull som vi har nå, så har vi hatt møte med ho lederen i PPT og fått litt tips der også i forhold til – så hun var en gang på teammøtet vårt. Nå har vi hatt leseprosjekt etter jul der vi tok – altså vi har hatt leseprosjekt med fokus på lesing i alle fag og i norsk (8:50) så har de lest litt. Så jeg ser det at vi har blitt mye mer bevisst på det å jobbe med begreper og det å lese tabeller og under bilder og analysere bilder og tabeller i naturfag og samfunnsfag og til dels RLE. Der ser jeg at vi er blitt flinkere. Så vi snakker mer om de tingene der. Så nå er vi akkurat ferdig med del leseprosjektet. Målsetningen var at vi skulle – denne uka her skal de ta nasjonale prøver en gang til bare for å se om vi ser noen framgang. For vi har vært bevisst på det med lesing så det er kopiert opp og alle de tre 8.klassene skal nå ta de så skulle elevene sette seg et mål om hvor mange poeng de ønsket eller håpet at de hadde gått fram da fra sist»* (S21t2). She also added: *«Målet mitt er at*

*elevene skal bli flinke, uansett om de gjør det bra på nasjonale prøver. Og de skal lære. Nasjonale prøver er et middel, og du kan se at der – det skorter litt her og litt der.» (S21t2)*

Each fall, the lower secondary school department has a meeting with the schools from which their students are recruited. In the meeting the lower secondary school gives feedback with respect to how the students from the different primary schools performed at the national tests when they entered the lower secondary school, and signals what are expected from the students when they start at grade eight; *«Men vi har nå veldig konstruktive møter med barneskolene. Vi har også med alle rektorene sammen med oss og så har vi også fagmøter i norsk og engelsk og matte med faglærerne der det blir satt veldig fokus på det som, konkret, det som vi føler er at vi er blitt mer konkret i forhold til hvor hullene ligger.... Og det gjør at vi føler at barneskolene har tatt mye mer tak» (S21d2).*

Also in school S22 the results from the national tests are presented for the staff. The head master told that *«vi samarbeider med skolekontoret i forhold til å se på hva var det som var svakhet med opplæringen innenfor de nasjonale prøver. Hvor er det vi skårer dårlig og hva må vi kanskje endre på i undervisningssammenhengen for å bøte på, eller forbedre resultater, innenfor de ulike områdene» (S22h)*, and according to one of the deputy head teachers, the test results are discussed differently in different forums; *«I fellesfora informeres det om med ulike søyler» (S2d2)*, *«Da får du søylene opp på de ulike områdene. Men du går jo ikke helt inn i hver oppgave» (S22d1)*. *«På teamet diskuteres det hvordan gikk det med våre elever. På klassenivå så går du inn på – direkte på enkelteleven på å se sterke og svake..» (S22d2)*. In this school, it is up to each teacher whether and how he/she will use the test results; *«Og etterpå så er det jo opp til den enkelte lærer å bruke det i sitt vurderingsarbeid. I forhold til de elevene og etterarbeid» (S22d1)*. In this school, the teachers that have taught the students the years prior to the tests do not get any information beyond the information given in staff meetings with respect to how “their students” performed.

At the municipal level, the educational advisors present and discuss the results from the national tests in meetings with head teachers and the teachers teaching the students that have made the test. The meetings focus on possibilities for improvement and what actions that should be taken in order to achieve a higher level of basic skills in mathematics and reading.

Also in municipality M3 the results from the national tests are discussed in meetings across schools. In this municipality test at grade eight are also discussed with the primary schools and test results from the upper secondary school are discussed with the lower secondary schools.

The temporarily appointed head teacher in school S31 told that *«vi har faste rutiner på at vi går inn sammen med de som har nasjonale prøver og ser på resultatet som kommer hvert år. Hva er det som gjør at resultatet er blitt som det er blitt – sitter vi og reflekterer over.» (S31h)* and in this municipality the results are discussed with the teachers at the lowergrade levels ; *«Lærerne ungdomstrinn og lærerne 5. til 7. trinn har en fast samling hvor de snakker om – for da har de fått sine 8. og 9. klasse resultat og vi har våre 5. klasse resultat så da er det «hva er det vi ser» og snakker litt om hva kan vi gjøre for at dette eventuelt skal bli bedre. ... Og så hadde vi i år for aller første gang prøvd å få – eller da laget vi en samling for alle lærere i 1.-4. klasse i alle sentrumsskolene ble invitert og der vi på en måte gikk gjennom samme type runde.» (S31h)*. With respect to how the results are used by the teachers, the assistant told: *«Jeg vet at vi pleier å være samlet litt på team og snakke med ledelsen, inspektør og kanskje diskutere resultatene. Men jeg tror ikke at det er noe spesielt system etterpå. Det hadde vi faktisk en diskusjon på for ikke så lenge siden at vi kanskje – vi etterspurte det*

*litt og tenke at vi burde kanskje ha gått inn og sett bak resultatene, hvis det var store avvik» (S31a). However, a too strong focus on test results might be difficult for some teachers; “Så det har vi diskutert, men så er det noen som synes at det blir litt vanskelig å – ja – din klasse gjorde det så bra og din klasse gjorde det så dårlig så kan det bli litt sånn...Så vi diskuterer hvordan vi kan bruke resultatene. Men vi har liksom ikke gått inn på hvert resultat sånn i plenum kan du si» (S31t)*

Even if both the school S32 head teacher and the deputy head teacher flagged a skepticism to a strong test regime, the results are discussed in teacher staff meetings; «Da går vi som regel gjennom prøvesetta og så går vi gjennom skåren, ikke på elevnivå. Men vi ser etter mønster. Er det spesielle områder her som viser seg å gi dårlige utslag...hvis dette er en – en trend som gjelder gruppe, så må en jo gå i seg selv og finne ut hva er det som må forbedres på» (S32h) and it is mentioned that the results are discussed in meetings across schools and grade levels. However, the way the deputy head teacher referred to the tests indicate some difference between internal and external objectives and expectations; «Men så synes jeg at utfordringen er at både med nasjonale prøver og kartleggingsprøvene - det er at hvis vi blir for ivrig på det, så kan vi dreie fokuset til lærerne i en retning vi egentlig ikke vil. Jeg vil ikke ha «teaching the test» og jeg vil ikke at lærerne skal være altfor opptatt av nasjonale prøver. Samtidig så ser vi jo på en måte i andre enden at det er jo så klart en viss forventning om at det blir fulgt opp og en del sårne ting.» (S22d).

**Table 7: School output control systems**

	M1		M2		M3	
	S11	S12	S21	S22	S31	S32
<b>“service delivered” control</b>						
Formal ex ante service delivered control system?	No	No	No	No	No	No
Service delivered controlled by clan control	Yes	Yes	Yes	Yes	Yes	Yes
<b>National tests:</b>						
Results discussed in staff	yes	Yes	Yes	Yes		
Level of focus/details when discussed in staff	Medium	Low	High	Low?	Low	Low
Feedback to former teachers?						
Discussed in meetings across schools	No?	No?	yes	Yes	Yes	Yes
Who participate from the school in meetings across schools?						
Teachers’ responsibility	“How they are used is up to the teachers in grad 5, 6 and 7	Focus on making all teacher responsible				
Exam results						
Term marks						
National Pupil Survey						
Local control systems	Sol, “alle teller”? er i ferd med å innføre Vokal	Lus, “alle teller”, er i ferd med å innføre Vokal	LUS			
Local bullying/well-being Survey	Yes	?	Yes			

Student well-being /learning environments (the Pupil Survey ++)

To be analyzed/summed up.

## Financial control and reporting

To be analyzed/summed up.

Table 8: Financial control routines and focus

	M1		M2		M3	
	S11	S12	S21	S22	S31	S32
Accounting reports to the municipality each:	4 months	4 months	3 months	3 months	month	month
How often does the head teacher control the financial standing	“Have a feeling” – each 4. Month and more frequent in the end of the year	Each third week (substitute teachers)			“Hun (rector) har stålkontroll” (temp. app. Head teacher)	Each month
“Money-focus”	low	low				

## Organizational structure and school building characteristics

All school buildings, except the building used by the primary school department in school S21, are traditional classroom school buildings. In school S11, S12 and S22, and in the lower secondary school department in S21, the students are organized in ordinary classes, and in the time scheduling process resources are allocated to each class.

In the primary school level in S21 the number of student per grade level is about 40 and each grade level has a “base” to their disposal. Each base has one small class room (**formidlingsrom**) and one larger room for individual or group work with desks for all students and space for other activities. In the time scheduling process, resources in terms of teacher and assistant man work years are allocated to each base. Usually, at least two teachers use all, or almost all, their time in one base. These teachers agree upon how they will organize the students and the teaching activities, and who should teach each subject.

Municipality M3 has decided that all classes with more than 18 students should have two teachers. In school S31 and S32, the number of students per grade level is between 25 and 35. Therefore, each grade level has 2 teachers to their disposal in all lessons. The teacher resources are allocated to each

grade level, and it is up to the teachers to decide on how they will organize the students and the teaching activities. School S31 has a lot of class room to their disposal. According to the head teacher, the teachers make different decisions with respect to how they organize students and teaching. Some split the students in two classes and each of them teach one class. Others cooperate closely, and organize the students in groups of different sizes over time and in different subjects. In school S32, the room capacity is more limited, and the number of students per grade level some smaller than in S31. In this school, the students are usually organized and taught as ordinary classes.

School S21 and S22 are organized as three departments; the primary school department, the lower secondary school department and respectively a department for students with heavy special needs (S21) and immigrant students that have not yet learned enough Norwegian to follow ordinary classes (S22). Each department is headed by a deputy head teacher/head of department.

In all the six schools, the teachers and assistants are organized in teams (**more about teams and team leaders' role**).

**Table 9: School building characteristics and how students and the staff are organized**

	<b>S11</b>	<b>S12</b>	<b>S21</b>	<b>S22</b>	<b>S31</b>	<b>S32</b>
School building	Traditional	Traditional	Grade 1-7: Base school Grade 8-10): Traditional	Traditional	Traditional	Traditional
Students/teaching organized in classes	Yes	Yes	Grade 1-7:: No Grade 8-10: Yes	Yes. (one grade level: Base)	Dependent on the teachers at each grade	Yes
Teams	Grade 1-2, 2-4 and 5-7	Grade 1-4 and 5-7	Grade 1-2, 2-4, 5-7, 8, 9 and 10	Grade 1-3, 4-5, 6-7, 8, 9 and 10.	Grade 1-4 and 5-7	Grade 1-4 and 5-7

## Governance structure

To be summed up

## Routines and procedures?

To be summed up

## Other factors

**Table 10: Respondents' professional background (education)**

	M1		M2		M3	
Chief administrative officer/head of educational and childhood affairs	Master's degree in public management		Mathematics/science		Teachers college	
Educational adviser	Preschool teacher education and degree in science of education		Mathematics		Teacher college	
	S11	S12	S21	S22	S31	S32
Professional background	Teachers college	Teachers college	Mathematics/science	Teachers college	Teachers college?	Linguistics

## Discussion and conclusions - preliminary findings/thoughts

The table below sums up some of the information revealed in the interviews and documents. In addition, the six schools are ranked according to the average of two year 's scores on the fifth grade national tests in reading and mathematics. It should be noticed that the scores are not adjusted for the students' socio-economic background. However, for each pair of schools the socio-economic conditions in the districts are quite similar.

### The impact of the head teacher's professional background

Although a general impression of small differences between municipalities and schools, some interesting patterns emerge from the cases. One interesting finding from the analyses of the cases is the difference between school S21 and S22. Although the two schools operate under the same municipal control systems focusing on student performance and having specific target with respect to student performance, there are differences between them. They differ with respect to the head teachers' focus on students' learning when asked about school characteristics, the way the results from the national tests are used and analyzed, and the achieved test results. While the head teacher in school S21 focused on students' learning and how the school works in order to improve student achievements when asked about school characteristics, the head teacher in school S22 mentioned characteristics such as inclusive, generous and competent staff, and how difficult it is to get an overview over such a large school. While both the head teacher and the deputy head teachers in school S21 talked enthusiastically about how the test results were analyzed and used in order to achieve enhanced student learning and test results, the head teacher in school S22 talked enthusiastically about their project to strengthen positive student behavior. These differences raise at least two questions. The first is why these differences between the schools with respect to focus on student performance and use of performance measures despite the fact that they operate under the same superior control systems and authorities? The other is whether there is a relationship

between learning focus, detailed and interactive use of performance measures and student performance?

With respect to the first question, the cases propose one possible answer; the head teachers' different professional background. It is interesting to observe that the head teacher who has the strongest focus on learning and test results, not only of the two but of all six schools, is the one with a mathematics/science background. On the other hand, the head teacher expressing most skepticism against performance measurement was the one educated in linguistics/languages (S32h). One possible reason might be that a person trained in mathematics and science, also is more familiar with and trained in use of statistics and analyses of quantitative data like test results. It is interesting to observe that the head of childhood and youth services and the interviewed educational advisor in M2 also are trained in mathematics/science. Based on these findings it is reasonable to propose that

*P1) Head teachers educated in mathematics and/or science will to a larger extent focus on learning and student performance and apply output control systems than head teachers having another professional background, especially when superiors focus on learning and student performance and apply output control systems.*

*P2) Head teachers having teachers college and/or education within social sciences tend to focus less on learning and student performance and more on other school objectives, student well-being and processes than other head teachers independent of superior focus and control systems*

*P3) If the municipal school authorities want to focus more on student learning, test results and formal control systems they should hire head teachers educated in mathematics/science.*

## **Learning focused culture and controls**

The present case study also proposes that:

*P4: there is a positive relationship between learning focused management controls/output controls and student performance.*

This fourth proposal is supported by school management research which mentions learning focus as a core characteristic of effective school leadership (e.g. Hallinger, 2010; Leithwood, Harris, & Hopkins, 2008)

## **School building characteristics and clan control**

Among the case schools, school S21 has a non-traditional school building for the primary school. In this school building students, teachers and other employees are organized in "bases". This way to organize the students and the teaching activities facilitate stronger clan control than traditional schools. Consequently the primary school level in this school is exposed to both intensive and interactive output control and strong clan control.



Table 11: Case key characteristics

	S11	S12	S21	S22	S31	S32
Vision keywords	«trygghet, trivsel, læring, mestring, aktiv	trygge rammer, vekst, utvikling, stolte av skolen	Kunnskap, trivsel, samarbeid, samspill, utvikling	Læring, trivsel, likeverd»	Trygge elever, engasjerte lærere og foreldre, gjensidig respekt, tett samarbeid hjem/skole, tydelige voksne – gode rollemodeller, tydelig fagmål, aktivt og godt læringsmiljø, ++ (198 words)	Alle barn er alles barn. Trygghet, respekt, mange intelligenser, oppmuntre, sterke sider, ulike evner, talent, sterke sider. ++ (487 words)
School characteristics – main impression	Well-being. increasing focus on student performance measurement systems and upgrading of technical equipment	Well-being, Focus on the individual student.	Well-being Learning-focused (S21h),. Intensive use of performance measures	Samhold dyktige medarbeidere mye humor På vei til å bli én skole Vanskelig å ha oversikt	«vi-skole», gode på konfliktløsning eleven i sentrum, filosofi for barn, stor takhøyde, flinke folk og kjekke elever.	Kompetent personale, lite regelorientert, god trivsel, rotete, «alle barn er alles barn», mange intelligenser, skepsis mot målesystemer
Separate school/education section in 4 year municipal action plan?	No		Yes		Yes	
	No	No	Yes	Yes	Yes	Yes
Objectives in 4 year municipal action program?	Yes		Yes/Some?		Yes	
	Yes	Yes	Yes/Some?	Yes/Some?	Yes	Yes
Output targets in 4 year municipal action program?	No		Yes		No	
	No	No	Yes	Yes	No	No
Level of focus/details when NP results are discussed in staff	Medium	Low	High	Low?	Low	Low
Chief administrative officer/head of educational and childhood affairs	Master's degree in public management		Mathematics/science		Teachers college	
Educational adviser	Preschool teacher education and degree in science of education		Mathematics		Teacher college	
	S11	S12	S21	S22	S31	S32
Professional background	Teachers college	Teachers college	Mathematics/ science	Teachers college	Teachers college?	Linguistics
NP results						
Mathematics (year 1 + year 2)/2 - range	3	2	1	6	4	5
Reading (year 1 + year 2)/2 - range	5	4	1	3	2	5

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# Budgets in festivals – a case study

## -Research ideas-

Oppdal 9.10.2013  
Per Ståle Knardal

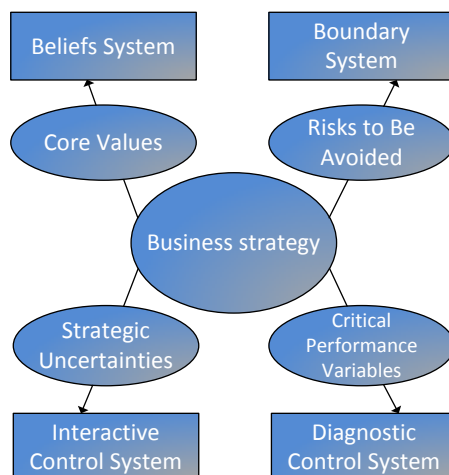
## Motivation

- The critique of budgeting
  - Budgeting – an unnecessary evil (Wallander, 1999)
  - Like steering a car by looking in the rear mirror
- The relevance of the critique
  - The annual budget is not yet ready for the scrap heap (Ekholm and Wallin, 2000)
  - Budgets continue to be used for control purposes and are perceived to be value-added (Libby and Lindsay, 2010)

## Context

- The festival – a large Norwegian festival
  - 200 arrangements – late July/beginning of August
  - Revenue MNOK 30 (45 % public funding)
- Crisis in 2008, deficit = MNOK 7
  - New budget system – pwc
  - Contextually aligned
  - Perceived to be an important control tool

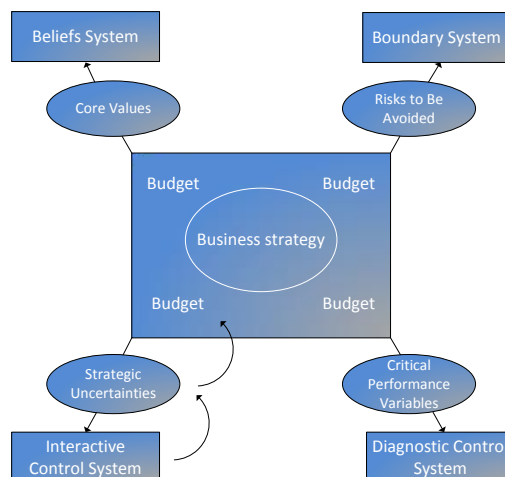
## The levers of control framework



## Research question

- How is the budget used in alignment with the levers of control framework? A study of a festival going from deficit to surplus.

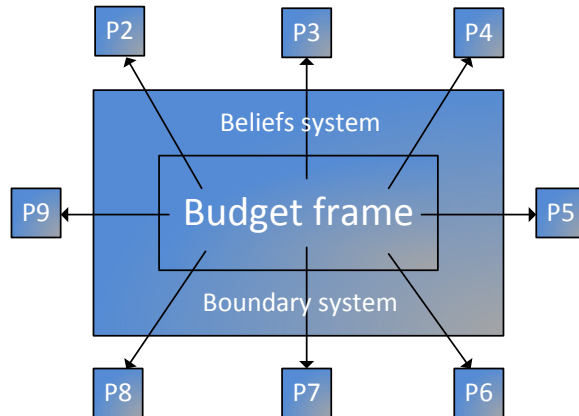
## Discussion (1)





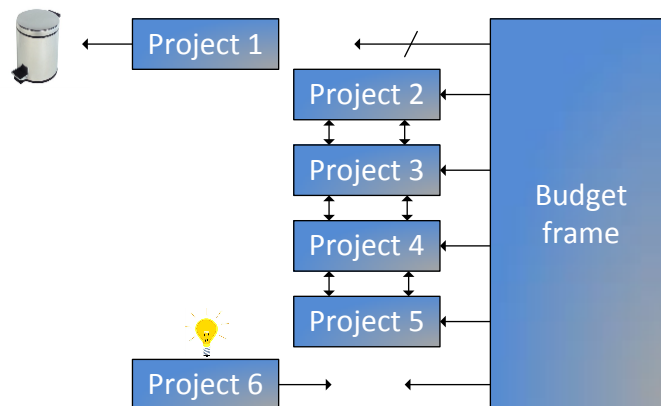
## Discussion (2)

Budget use 1st November – beliefs and boundary system



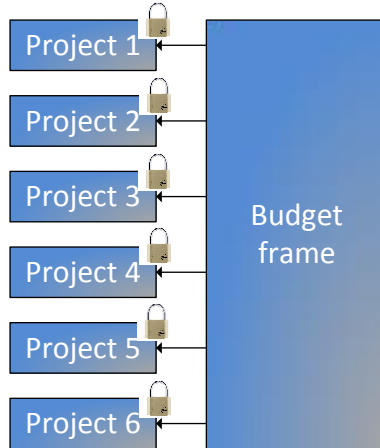
## Discussion (3)

Budget use 1st February – interactive use



# Discussion (4)

Budget use 15<sup>th</sup> May - diagnostic use



# The coexistence of different logics after hospital mergers or problems with management control at distance?

## First draft

Workshop: Management accounting and control –  
the diversity and opportunities in research and research methods  
9th - 11th October 2013, Oppdal, Norway

*Elsa Solstad, Harstad University College &  
Trondheim Business School*

*&  
Inger Johanne Pettersen, Trondheim Business School*

## Background

- \* Most hospital reforms represent a rationalist logic that follows managerial principles - mergers
- \* The managerial logic may be in conflict with both the identity and values of the professional employees in hospitals (professional logic)
- \* Mergers imply management control both close to production and at a distance

## Problems

- \* The data show that there are problems with different logics, and problems with management control at distance?
  - \* Different logics?
  - \* Difference in closeness and distance?

## Theoretical framework?

- \* Professional/managerial logics?  
or
- \* Vertical/horizontal management control?

## The study

- \* Two surveys
  - \* 2005
    - \* Population: three small hospitals merged into one hospital enterprise
  - \* 2013
    - \* Two small hospitals (two of the three hospitals from 2005) and a large hospital merged into one hospital enterprise

## Empirical findings?

- \* What should we focus on?



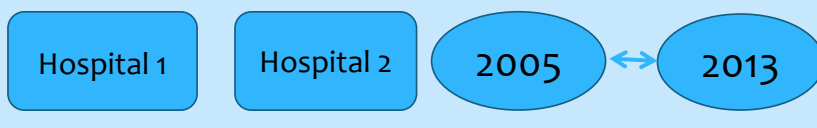
# Different logics?

- \* To study this phenomenon we include the population from 2005 and 2013
  - \* But the problem is that the populations are different, and then there will be problem with the comparability
- \* All professional employees in the two hospital enterprises at two different periods
  - \* Data from both 2005 and 2013

<b>The administrative top leaders have a good dialogue with the professional employees in the hospital enterprise</b>					
	<i>Strongly agree/ partly agree</i>	<i>Neither agree nor disagree</i>	<i>Strongly disagree/ partly disagree</i>	<i>Total (%)</i>	<i>Total respondents</i>
<b>2005</b>	2,3 %	11,6 %	86,1 %	100 %	258
<b>2013</b>	8,0 %	35,2 %	56,8 %	100 %	681

# Management control close to production and at a distance

- \* Alternatively, we can compare the two hospitals that are the same in 2005 and 2013
  - \* Focus on the two small hospitals that are involved in both mergers
- \* Focus on vertical/horizontal management control
- \* Distance and closeness
- \* Data both from 2005 and 2013



## Further research?

- \* Vertical/horizontal management control
- \* Management control close to production and at a distance (the top leaders are located at the large hospital)
- \* Two small hospitals (two of the three hospitals from 2005) and a large hospital
- \* Data from 2013

Large  
hospital

Two small  
hospitals

# Research in Progress

Case study of the Festival  
by Eva Lechner

## Contents

- [Context](#) of the case study
- The Phenomenon under research
- The Diversity and Opportunities in Research and Research Methods





Foto by Anita W. Lande



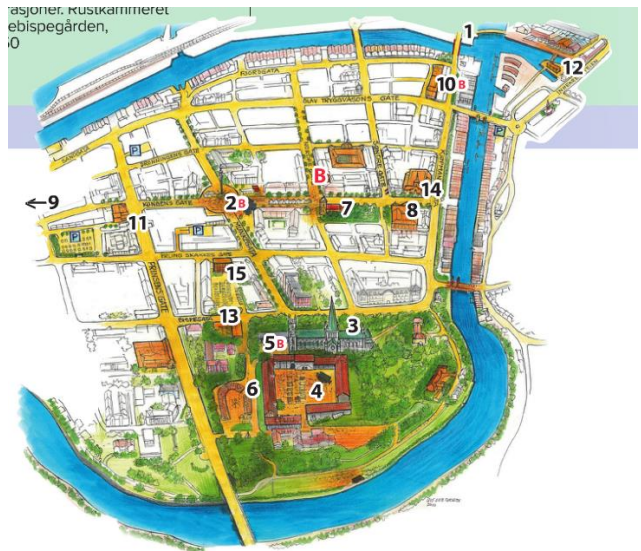
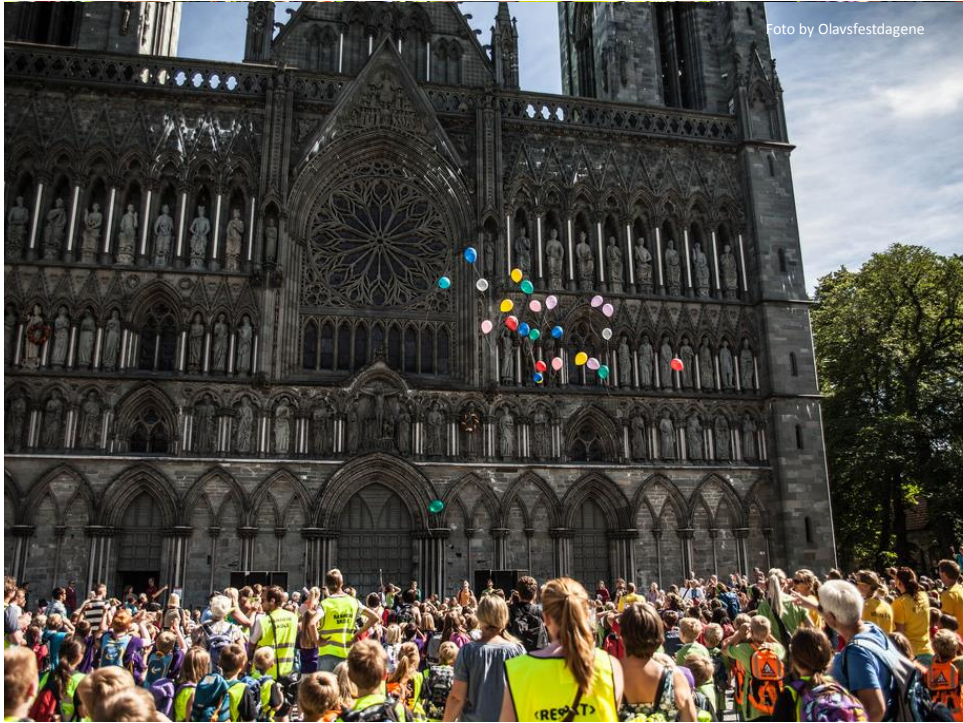
Foto by Anita W. Lande



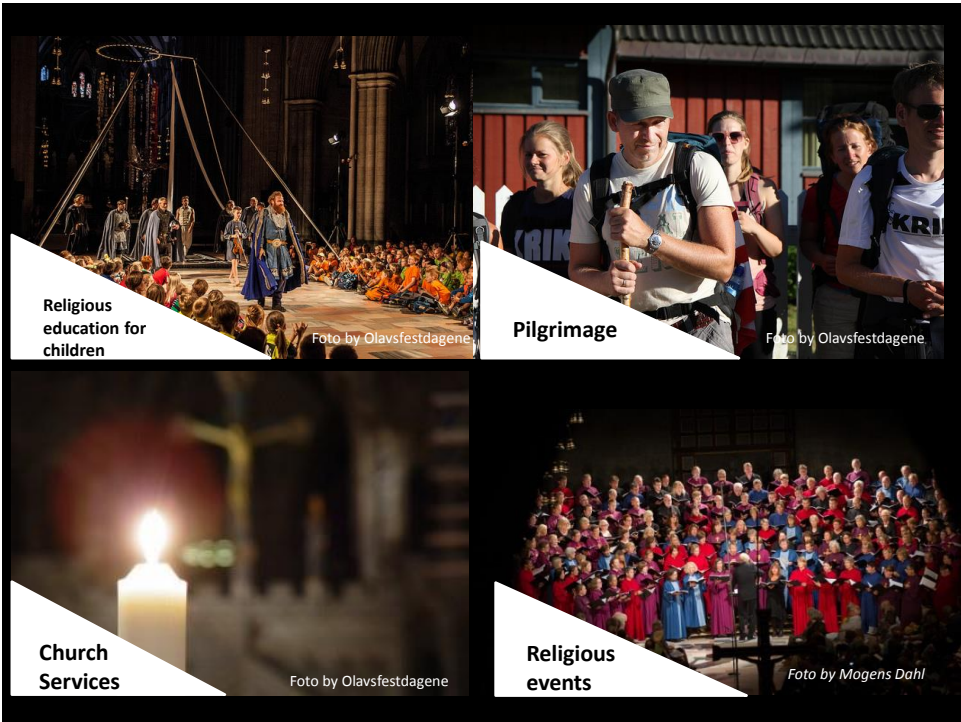
Foto by Olavsfestdagene



Foto by Olavsfestdagene





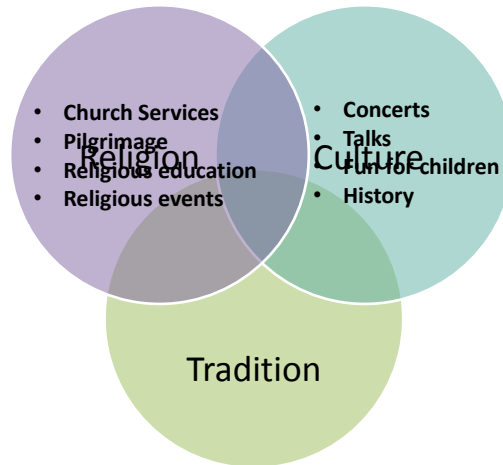


# St. Olav's Days

## Experiences that moves

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## St. Olav's Days – The goal(s)...

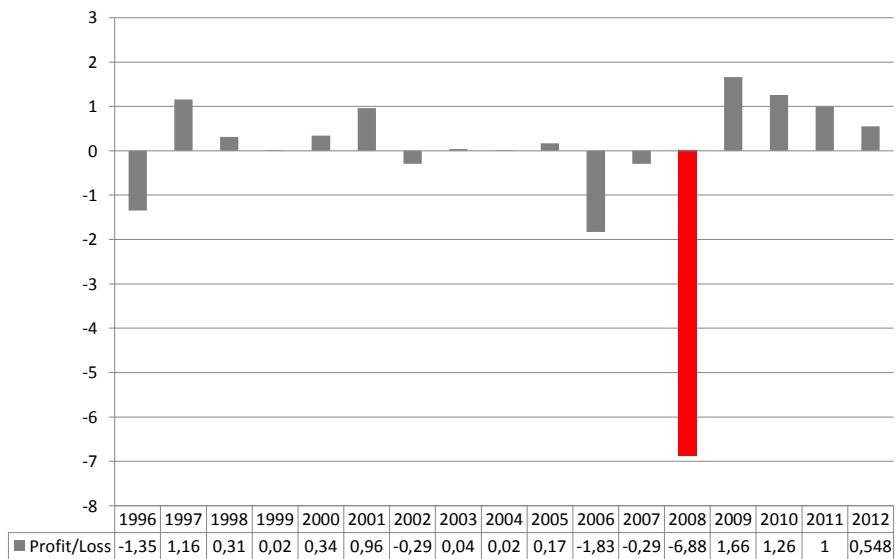
- Experiences that moves
- “To reach the number of unique high quality experiences.”
- To restore and strengthen Trondheim as a national clerical and cultural “kraftsentrum”\*

(å gjenreise og styrke Trondheim som nasjonalt kirkelig og kulturelt kraftsentrum)

\* Accepted by the board meeting December 17, 2008

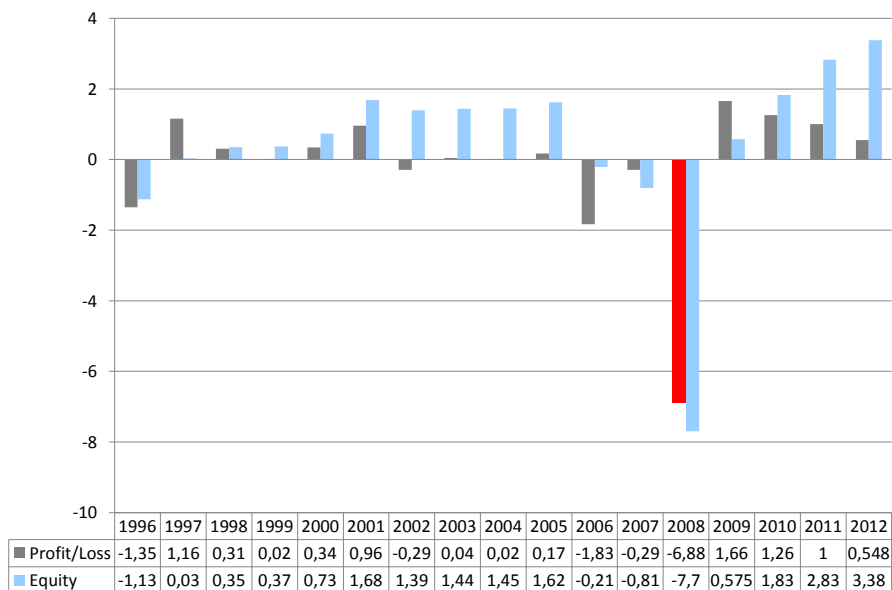
# 2008

## Profit/Loss Account



Sources: Trondheim kommunerevisjon, 2008, Olavsfestdagene, 2013

## Profit/Loss vs. Equity



Sources: Trondheim kommunerevisjon, 2008, Olavsfestdagene, 2013

## How Come?

	Number of events	Revenues	Costs	Profit
1998	112	5,22		
1999	98	9,08		
2000	113	8,83		
2001	136	10,65		
2002	148	12,38		
2003	153	14,48		
2004	200	17,7		
2005	179	21,59		
2006	188	26,79		
2007	169	22,96	23,24	-0,28
2008	228	24,76	31,631	-6,871
2009	197	24,98	23,33	1,65
2010	190	26,97	25,78	1,19
2011	258	28,48	27,6	0,88
2012	239	33,95	33,62	0,33

Sources: Trondheim kommunerevisjon, 2008, Olavsfestdagene, 2013

## How Come?



**Per Kvistad Uddu**

**Festival years:  
1998 – 2007**



**Randi Wenche Haugen**

**Festival years:  
2009 - 2013**



**Petter Myhr**

**Festival years:  
2014 - Present**

**“ To achieve national breakthrough in the church and the rest of the population's awareness. And in the media.”**

## How Come?

	Number of events	Revenues	Costs	Profit
1998	112	5,22		
1999	98	9,08		
2000	113	8,83		
2001	136	10,65		
2002	148	12,38		
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2005	179	21,59		
2006	188	26,79		-1,83
2007	169	22,96	23,24	-0,28
<b>2008</b>	<b>228</b>	<b>24,76</b>	<b>31,631</b>	<b>-6,871</b>
2009	197	24,98	23,33	1,65
2010	190	26,97	25,78	1,19
2011	258	28,48	27,6	0,88
2012	239	33,95	33,62	0,33



Sources: Trondheim kommunerevisjon, 2008, Olavsfestdagene, 2013

# How come?

- The role of the sponsor
- Role of The board of Directors:
  - 2 members from state level
  - 1 member from Sør-Trøndelag region
  - 1 member from Trondheim municipality
  - 1 member from the church

## Phenomenon

### **1. Festival week and festival planning phase – How do they do it?**

Permanent employees (8) → Temporary employees (10) → Volunteers (360)  
The role of the church and the board  
Artistic impact

=> management control systems and their role in managing tensions between social and economic imperatives in non-profit sector

### **2. How was festival rebuilt after the huge deficit?**

### **3. How do they deal with uncertainty?**

Risk management at the operational level – security, weather, illness of artists, ...  
and risks at top-management level

=> activities which contribute to overall management control systems



# The Diversity and Opportunities in Research and Research Methods

## Case Study Research Challenges

- Physical requirements
- ....



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*Rapport 12/2008 F. Trondheim.*

[www.olavsfestdagene.no](http://www.olavsfestdagene.no)

And many other sources.... ☺

**The End**

# **On the limitations on the control processes of a dominated actor from taking part in Joint Venture**

## **Abstract**

New public management has suggested a wide range of new solutions to efficiency and control problems within municipalities. Joint Ventures have been suggested to enable organizations to gain access to scarce resources and achieve economy of scale. However, Joint Ventures limit autonomy for municipalities. In this article, we explore the consequences of this for municipalities as dominated owners of Joint Ventures, with respect to internal control processes. Based on a qualitative case study, we find that the use of a Joint Venture to provide municipality service might induce a lack of competence regarding services, necessary to perform control over these services. We also show how services provided by Joint Ventures might have a crowding out effect on services provided internally.

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Co-author:

Kari Nyland, Trondheim Business School.

# On the limitations on the control processes of a dominated actor from taking part in Joint Venture

## Introduction

New Public Management has induced a search for more efficiency in the public sector, where "copying" of solutions from the private sector has been a prime theme (see Hood, 1995, for a review). In recent years, the use of different forms for interorganizational cooperation has been incorporated in this development (Cäker och Siverbo, 2011). Barretta and Busco (2011, 213) claims that "The development of new cooperation agreements and innovative forms of organizing within the public sector have been portrayed as possible ways of increasing performance through more efficient use of resources, greater competitiveness, and improved customer service." This development forces management of public sector organization to face new challenges, as Barretta and Busco continues "In this context, cooperation among partners needs to be constantly monitored and managed through an appropriate governance structure" (213). So far, research on this topic has been limited, Barretta and Busco (2011, 211) claims that "limited attention has been dedicated to studying the role of management control practices within inter-organizational relationships in public organizations".

Especially small municipalities are today encouraged to seek cooperation with each other, larger municipalities and other external actors in order to cope with contemporary challenges. Many of the services that municipalities are liable to provide require substantial investments in knowledge and physical capacity. To cooperate may enable municipality to share to burden of required investments (Cäker and Siverbo, 2011).

However, interorganizational cooperation has implications for the internal operations of a firm. From the private sector, for example Mouritsen et al (2001) has shown how cooperation put pressure on reshaping internal processes and Cäker (2007) has shown how close customer relations put pressure on changing accountabilities within the organization. Such external pressure and limitations on internal routines may also be problematic to public organizations, with a legal requirement on serving their clients within a limited budget. This can be expected to be especially problematic to dominated actors in interorganizational relationships. Earlier research from the private sector has shown how dominated actors are limited in their freedom to develop accounting and control routines for outsourced activities, with social controls as the remaining possibility (Cäker, 2008; Donada och Nogatchewsky, 2006). To our knowledge, the situation of a dominated actor in public sector cooperative arrangements remains unexplored.

In this article, we investigate how the cooperative organizational form of Joint Ventures inflicts on a small municipality's internal control processes. Regarding public joint venture, Cäker and Siverbo (2011) has shown a mainly positive effect on the advancement of control routines for Joint Ventures with the presence of a dominating owner. However, these results arise out of the dominated actor taking on a responsibility to align the control of Joint Ventures with other internal processes. This would open up for a potential problem of dominated owners, being forced to adapt to the JV and indirectly to the dominating owners. We aim to describe how such pressure might limit the internal processes of a dominated owner.

The article is based on a qualitative study with 12 interviews as primary data collection. Interviews have been done with both politicians and administrators in six municipalities and with managers from a Joint Venture. This is the first version of our paper, which will be developed concerning all parts.

### Frame of reference

Joint Ventures are one form of interorganizational relationships, where organizations cooperate in order to fulfill some aim. In establishing a Joint Venture, this cooperation is organized as a separate entity, where different owners have strategic and/or financial expectations on the JV (Büchel, 2003). Through establishment of a JV, an organization can secure long term access to different resources, physical or immaterial, without acquiring them or explore new possibilities by matching resources with those of another organization. The motive for a JV can therefore be risk minimization, cost efficiency and development.

Management control is used in organizations to enable fulfilling of organizational objectives. Public organizations have the objective to produce public value (Spano, 2009). However, as Spano points out, this is done under a restriction of costs. In many countries, this restriction is regulated by law; public organizations are obligated to provide services with respect to a budget in balance. Management control in public organizations should therefore enable to fulfill objectives under a financial restriction.

The general pros and cons with using joint cooperation to achieve this relates to the gain in access to resources versus the loss of autonomy (Pfeffer och Nowak, 1976). Outsourcing of activities to an external organizations, for example a joint venture, does not relieve for example a municipality from its obligations. This induces a complexity to the control process when a municipality engages in joint ventures (Pfeffer and Nowak, 1976). An external actor needs to be controlled by the municipality, since it will have an influence on the ability of the municipality to fulfill its objectives. This regards both the quality of service provided and the cost of these services.

Regarding quality of service, the literature on interorganizational relations has highlighted the potential of sharing and pooling of knowledge (see Hardy et al, 2003, for a review) (Hardy et al., 2003). Collaboration in for example joint ventures has been identified to enable both transfer of existing knowledge and building of new capabilities. Hardy et al (2003) claims that knowledge issues are often the central strategic effect of collaboration, enabling organizations to cope with tasks they otherwise could not handle.

Interestingly, however, Hardy et al (2003) conclude that high level of involvement in the interorganizational activity is necessary to achieve knowledge transfer. This would problematize to engage in Joint Venture without devoting internal resources to the same, if an intended outcome concerns a high quality of service. Through outsourcing, a municipality can get access to knowledge resources without having to acquire them. However, municipalities still have the responsibility to control that the quality of the service provided matches demands of the public. Therefore, knowledge about services outsourced is still needed in order to perform this control and without resources devoted to this, the opportunity to gain this knowledge through cooperation may be lost.

Cost of services provided through outsourcing can generally be financed in two ways; either by fees paid by the public directly to the Joint Venture, or by funding from the municipality's tax revenues from the public. In both cases, the task of the municipality is to control for the value of money. However, an

additional complexity arises concerning funding through tax money. Taxes are collected for a number of services provided by municipalities. More money to one area implies less money for another area. The loss of autonomy that Pfeffer and Novak discuss is of potential relevance here. If the engagement in a Joint Venture results in a loss of autonomy regarding the level of spending, a potential problem arises.

Therefore, in order to fulfill its objectives when engaging in Joint Ventures, municipalities must find way to control these Joint Ventures. A Joint Venture implies challenges regarding control in both the horizontal and the vertical dimension. The vertical dimension is the control of the owners by the Joint Venture. This dimension is consistent with the classical control, and earlier joint venture researchers have used general management control typologies to study this (Cäker och Siverbo, 2011; Groot och Merchant, 2000). Results control affects behavior through creating expectations of what to achieve and providing freedom to act inside the Joint Venture to use local knowledge to achieve these expectations/targets. Action control influences behavior through rules and regulations about how to act. This is a more direct form of control, which requires that knowledge about suitable actions resides among the owners of the Joint Venture. Furthermore, social controls are aimed at influencing the values and beliefs that guide action within Joint Ventures. Social controls are often claimed to be interlinked with trust. With social control as the most indirect control, often leaving actions unsurveilled for long periods of time, trust in that Joint Venture will have the knowledge and good will to make decisions in line with the interests of the owners is required.

The horizontal dimension concerns how different owners find ways to correlate their actions with respect to the Joint Venture (Cäker and Siverbo, 2011). This is a complexity that is specifically added from the organizational form of Joint Venture, where the interests of different owners need to be correlated to each other in order to provide coherent signals to the Joint Venture. Cäker and Siverbo (2011) note that a substantial part of these issues need to be handled in the legal agreement that constitutes the Joint Venture. However, unexpected conflicts among owners and an initial skepticism to being able to foresee future development may require horizontal controls. Cäker and Siverbo (2011) suggests that social controls are most likely to be important here, but that these can be supported by actions rules that regulates continuous interaction between the owners.

In this article, we explore the situation of a dominated JV owner. The distribution of power in an interorganizational relationship has, not unexpectedly, been shown as decisive to the formation of management control. Especially, the formal action and results control have shown to be under the influence of the dominating actors (Donada and Nogatchewsky, 2006; Cäker, 2008). Dominated actors are to a large extent left with social controls as the possibility to influence the relation. Both these articles investigate controls on both operative and strategic levels in the relationships, and find that the social controls are most active on the operative level. Cäker (2008) claim that this means even if the social controls may facilitate the exchange process, they are less influential regarding “setting the agenda” for the relation. However, studying a municipality owned joint venture, Cäker and Siverbo (2011) find social controls on the strategic level, which enables dominated actors to influence also the strategic development of a Joint Venture.

## Case description and analysis

## Introduction

Three municipalities (A, B and C) formed the JV in 2007 to supply fire services to their inhabitants. Later, in July 2012, four new municipalities (D, E, F and G) joined the JV. The municipalities are of very different size, and their share in the JV is based on their original fire budgets:

Municipality	Share in the JV
A	78,2
B	6,5
C	3,0
D	4,7
E	4,2
F	1,9
G	1,5

The owners finance the company based on their holding. For the small owners this accounts for 1-2 per cent of their total budget, while the corresponding proportion for owner A is 0.4 per cent. The JV now includes 12 fire stations and 330 employees.

The JV company has two major governing bodies. The Supervisory Board is the highest body, including the Mayor of the owners and six additional delegates from owner A. The Mayor of municipality A serves as chairman. The Supervisory Board elects a board of directors with seven members. At least three members are appointed by owner A, including the chairman of the board.

A municipality has a legal responsibility to provide adequate fire services to its residents. Even if services are ordered from the JV, the responsibility still remains within the municipality. A partnership agreement regulates the authority and responsibility between the owners and the company. Each municipality is responsible for creating an annual risk and vulnerability analysis (RVA). Based on the RVA, the JV company designs a fire plan for the municipality indicating the activities for the following years.

When the JV was established, the main objective was to improve the quality of service, both in terms of emergency response and efforts to prevent fire. New national fire regulations made it difficult especially for the small municipalities to fulfil all demands:

*“The new fire regulations put such high demands on the fire service. It is inappropriate to manage it within a small municipality,... It's much more effective to work with municipalities that already have everything up and running.”* (Informant B)

Out of one of the dominated municipalities, the question of the objective with the JV should be fairly simple; to have a fire service that enable them to keep the population safe. In relation to this objective there is a broad consensus among the participants that the partnership has raised the quality of services. As one of them puts it:

*“We get to have a fire service which in a way is "state of the art". It works as a modern fire service is supposed to work, as opposed to the option which would be a "here is what we can afford-" type of fire service.”* [Informant B]



Some of the owners also had expectations about reducing costs for fire services.

«One was that they wanted to operate more efficiently, thus saving money. And the second was that they wanted to raise the competence, the quality of services”. [Informant B2]

Different level of ambitions is an obvious challenge in this collaboration. It is generally agreed that the company has ambitions to grow larger and that there are economies of scale that can be exploited. However, there is also a fear that the dominant owner and the CEO of the JV have higher ambitions than the small holders:

*“Show me the city in Norway which has a similar modern fire department as (we) will eventually get. It does not exist. And that has probably something to do with the manager here; he has some ambitions that are slightly larger than the JV”. [Informant B]*

*“.. if growth causes synergies which make it less expensive for the current owners, the growth most certainly is wanted. But if this means that the company will be difficult to run... This company was established to promote efficiency, not to be huge. And it is actually already very large. A is a giant compared to the rest of us. So for me it is not necessary that all municipalities in the district join the JV. This may not be very effective.” [Informant B2]*

Each owner is required to cover a fixed percentage of the total costs. The cost for each owner is thus not linked to the activity in its region. If owner G points to an initiative in its RVA which is taken into their fire plan, then G has to cover 1.5 percent of the costs associated with this, while A must cover 78.2 percent. On the other hand, G has to cover 1.5 percent of costs for all activities in the other municipalities. Thus, the individual owner has little influence of the overall level of activity. In addition the quality of service and cost-efficiency in the production of services is controlled by the JV company. This poses a huge risk for the owners.

### **Vertical control**

The partnership agreement is supposed to regulate the activity within the JV. According to some of the respondents, the original agreement did not communicate the element of costs and the objective of achieving synergies well enough. The original agreement focused mainly on quality, which made the company eager to build a great fire service, not necessarily a cheap one. This has led to quite large cost increases.

*“A major concern with this company is that costs have increased tremendously. And this is probably not quite in line with many of the owners' objectives. On the contrary, they might have a goal of reducing costs, right. Or at least keep the same level, and still increase the quality. Thus, the partnership agreement was changed, so if you read today's partnership agreement, it focuses on achieving cost effects, synergies through merging and efficiency increases”. [Informant B2]*

According to the partnership agreement the Supervisory Board is proposing a total budget for the JV which is then approved by the Board. This is the formal part of the budgeting process and is supposed to take place in May. Within the municipalities, the political discussions about their annual budget take



place in the autumn after the annual grant from the State is received. This difference in timing is a challenge. Thus, the CEO of the municipalities and the management of the JV meet in May to informally agree on the budget frames for the JV. According to our respondents, this situation is characterized by the municipal CEO, wanting to save money, and the CEO of the JV, wanting to spend money:

*“He (the JV CEO) obviously has the ambition to build a modern and well-functioning fire department. And we have a dilemma, the money he wants to spend in the JV, is also needed elsewhere in the municipalities. [Informant B2]*

The CFO-forum is an informal control mechanism that makes it possible to agree on a budget before the summer. However, it is considered a democratic problem that the level of costs for fire services is removed from political control in the municipalities.

*“What happens when we go to the municipal council and reveals what it costs, is that there is no real discussion. This is not what we are discussing; we discuss whether we should have two additional school places or whether we should add three more nursing beds. That is what we are discussing, and not how much the cost of the JV has increased. That is something that our CEO will take care of, it just has to be solved.” [Informant B]*

Moreover, the input from the forum of municipal CEOs is further processed by the Supervisory Board. If they decide to increase the budget, the owners have to accept it and find a solution to the situation. This is perceived as a strange solution, since bodies within the JV company really determines what the municipal council is going to grant, leaving the municipality with rather limited influence on a budget item that is significant for them.

*“This is the dilemma of the inter-municipal company the way I see it, it is sort of “foul play” (Urent trav)“ [Informant B2]*

### **Quality assessment**

Increased quality of services is considered the greatest benefit from the partnership. All actors seem to agree on this point. Different drivers of quality are highlighted; access to better equipment, more expertise, and a professionally run company.

*”Just look at the machinery in the JV, versus what we had ourselves. It's like night and day. Consider the expertise within the JV, as opposed to what we had - cooks and bakers and plumbers, right. Clearly, it cannot be compared. It is like two different worlds.”[Informant B]*

Quality assessment is based on the legal requirements for fire services. These include conditions such as response time, required capacity, the number of preventive controls etc. According to the formal control system, the JV company is responsible for verifying quality. However, according to our respondents, there is no information system reporting on the level of quality to the owners on a general basis. The company is obliged to report to the owners when they find that the quality requirements are not met. For the owners, it is considered difficult to assess the quality.

*“No. .. The company has the responsibility to report to us if they do not deliver what is legally determined, that is, what is required for a fire department. Beyond that we have no ability to test*

*it, we have not...we have nothing, there are no quality parameters, so of course it's difficult."*  
[Informant B]

By outsourcing fire services to the JV, the owners no longer need to have detailed knowledge of the production of fire services or the legal requirements for such services. Now they can rely on a professional company to take care of this. On the other hand, the owners perceive themselves as increasingly distanced from the company's operations; they no longer have the necessary expertise to evaluate the company's activities. Thus, the autonomy of the JV company is assumed to be one of the main challenges for the small co-owner.

*"Perhaps A has the competence, I do not know. But for our part, it is totally unacceptable to interfere - other than having a passive mailbox they can send information to. "* [ Informant B]

The lack of knowledge also makes it difficult for the municipalities to design their own RVA. In practice, experts from the JV company contribute to this process, making the JV even more in control of their own activity.

*The RAV analysis of (the municipalities) was prepared with a great deal of support from the administration of the JV company - especially from the fire chief. From our side, the plan manager, contributed. He reports to me, so in that respect the municipal CEO participated indirectly. But the influence from the company itself was significant."* [Informant B2]

Thus, it seems as if both the volume of services, the composition of services and the quality of services is beyond the control of the dominated municipalities. However, the owners trust the company to have the necessary competence to make the right decisions and supply high quality services when needed.

*"We perceive the company as highly professional in many ways .. Definitely. We have outsourced an important service to, let's say, a serious player. We expect it (the company) to be in full control (of the quality)"* (Informant D)

### **The dominating owner...**

In the formal governance system of the company, municipality A is given a dominant position through their representation in the supervisory board and in the board of directors. On several occasions the Supervisory Board has made decisions where the small owners disagreed. This is mainly explained by the presence of the mighty Mayor of the dominant owner;

*"Yes, it has happened and it is mainly due to the fact that (name of the Mayor of A) is sitting there, and she is powerful."* Informant D

There is a general perception that the dominant owner exploits their position of power.

*"Power rules ( Det er makta som rår), to respond specifically to it. I somehow feel that A takes the other owners seriously .... However, and you have probably heard this from the others as well, I have the feeling that A may have used their power in certain areas. It will hopefully get*

*better. If not, I think that might open up for someone exiting the collaboration. That may happen.” (Informant D)*

All respondents are critical to the partnership agreement because it is vague and incomplete. This formal contract cannot possibly cover all conditions. This allows for informal influence. Since expertise and capacity are key factors, this leaves municipality A in a unique position.

*”It really just means that A is better prepared to meetings than we are. They are in a position to be prepared, we are not.....You can say that A is in the driver's seat; they are large and they have the resources to investigate things. Thus, they have the ability to get things on the agenda that we do not have the capacity to engage in” [Informant B]*

## Discussion

On a general level, our case involves owners with diverging interests in and power over the joint venture. A dominant owner has a significant higher ambition and power than all other owners. In the following, we outline the effects on the dominated owners of this, pointing at some structural difficulties for the internal control processes with potential theoretical relevance. (The next version of this paper will also contain an outline of the controls available to handle these structural difficulties)

### Knowledge related processes

The JV in the case was initiated due to an institutional pressure through regulations demanding improved quality of fire- and rescue services. Small municipalities were thereby induced to enter as dominated owners in a JV with A, to share investments needed to improve quality of service. The dominated owners do see a substantial raise in quality as an outcome. However, our study shows that there is a fundamental disagreement of how far improvements in quality should be driven. Since A and the JV management seems to be in agreement of developing the JV into providing a state-of-the-art fire and rescue service, the apprehension from the dominated owners is that there is a difference in the current ambition of the JV and the level of service quality that is required by regulations.

However, a key observation from the case is that the dominated owners have problems to back this opinion by knowledge. The dominated owners in our case have not enrolled in active involvement in the JV operations to gain knowledge themselves (Hardy et al, 1993). This is shown by numerous general statements from the dominated owners and more specifically by how they rely on the JV also to analyze their own needs (RVA). The JV thereby has strong influence on deciding what to deliver. This informational advantage further strengthens the position for the JV to set the agenda for development.

This signals an overly strong belief in that entering the JV would handle all questions concerning fire- and rescue services, which now have made the small owners not only dominated by size and ownership, but also by knowledge. Looking at the construction of the JV agreement, the choice of not keeping in-house resources after entering the JV can be understood. The share in the JV agreement was based on the fire budget before entering. With an initial expectation on that the total budget of the JV should be the sum of the entering owners' initial budget, resources devoted to keep in-house competence for the dominated owners would lead to an increase in the budget at the starting point. This is a hypothetical reasoning, but it is reasonable that it restricted the dominated owners, since they signaled that their initial expectation was to achieve better quality and economic efficiency due to economics of scale.

This lack of knowledge to control service quality has multiple potential effects. First, as we reason above, it is a bit ironic that it might contribute to the increase in cost due to the lack of information to counter-argue the suggestions from the JV about the investments they claim is necessary. Second, there is a potential negative effect regarding the adaption of fire- and rescue services to local needs. Earlier research has shown that coordination on local levels in interorganizational cooperation often is based on social coordination between well informed actors (Cäker, 2008). The lack of knowledge among the dominated owners might give rise to lack of operational input, for example in the RVA-analysis. Third, the lack of knowledge among the dominated owners may problematize the option of exit. One of the dominated owners see this as a viable alternative if the cost of the JV does not stop going up. However, after entering the JV and having down-played the knowledge about these services, to insource these services would be restricted.

### **Financial processes**

Our case shows how the loss of autonomy (Pfeffer and Nowak, 1976) over municipality services taken over by a JV implies a pressure on keeping the restriction on costs (Spano, 2009). The pressure on cost comes from the higher ambition with JV services from both JV management and the dominating owner. The dominating owner is seen as influential both through the formal influence and informational advantage due to their higher capacity to devote attention to the JV. The JV management is influential due to a knowledge advantage regarding services.

As the partnership agreement is written, the dominated owners are forced to pay their share of investments in the JV, no matter if it regards services they have use of or not. This share is bigger as a share of the municipality budgets for the dominated owners than for the dominating owner. Since the share in the JV was based on previous spending on fire services in the municipalities, we can only assume that this was higher among the smaller municipalities due to fixed cost for basic capacity, the same no matter how many inhabitants there are in the municipalities. This means that the cost of fire services is potentially of greater concern among the dominated owners.

The structural situation, with the lack of knowledge and power to stop the increasing cost, is problematic in itself. However, it is interesting how this is further amplified by the financial decision processes. Since the negotiation of JV finances for next year occurs before the budget process in the different municipalities, this puts the dominated owners in a twofold problematic situation. First, in discussing the finances for the JV, they have limited knowledge about other demands on their internal budget for next year. This is of potential relevance regarding informal understanding from the other owners, especially the dominating owner, about financial difficulties that could be an argument for relieving a municipality from the financial burden of the JV. Second, since the financial requirements of the JV is decided before the rest of the budget for the municipality is negotiated, fire services might have a crowding out effect on other services as long as tax raises not is seen as an option. The loss of autonomy over the outsourced services thereby also has a potential effect on other services provided by the individual municipalities.

### **Conclusion**

In this descriptive paper, we investigate how the cooperative organizational form of Joint Ventures inflicts on a small municipality's internal control processes. Based on a case study of a JV, with one dominating and five dominated owners, we offer two conclusions. First, regarding quality of service, the expectation from dominated owners that a JV will contribute to improved quality of service may

undermine development of in-house knowledge with potential effects for the internal control processes. The ability to influence the JV is hindered, concerning both to control for efficiency in JV operations relating to municipality internal processes and financial efficiency of the JV. With the responsibility for municipality to ensure operational and financial viability of services that are outsourced, there is a need for in-house knowledge about outsourced service for control processes.

Second, a JV agreement that enables external actors to influence cost levels of the municipality give rise to a potential risk of outsourced services to crowd out other municipality services. Besides this fairly obvious observation for a dominated actor, we highlight the influence from uncoordinated financial processes. To preserve the opportunity to balance activities that are outsourced with in-house activities, a coordination of the financial processes among the owners of a JV appears to be necessary.

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# **CONCEPTUALIZING ACCOUNTING IN NETWORKS: THE PERFORMATIVE ROLE OF ACCOUNTING AS A BOUNDARY OBJECT**

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Work-in-progress paper

## **ABSTRACT**

The purpose of this paper is to develop our understanding of the relationship between accounting and delineated entities of inter-dependent activities and resources in networks. Specifically we aim at an increased understanding of the role of accounting in the creation of boundaries, but also as a tool that enables transcendence across boundaries. Such an understanding includes an ability to map out how something plays out in various empirical settings by explaining the mechanisms behind it. In this paper we seek to identify and deconstruct the social mechanisms that control the relationship between accounting and the creation of boundaries around certain sets of activities and resources – the performative role of accounting. We review the literature on accounting and on boundary objects, which is then used to conceptualize the boundary creating and transcending capacity of accounting in networks. We show how the concept of boundary objects can be used to develop an understanding of the performative role of accounting in networks. We end with the formulation of a set of propositions, which can be used to inform further empirical investigations into the matter.

**Keywords:** Accounting, Boundaries, Boundary Objects, Network Interfaces, Performativity

## INTRODUCTION

In the traditional accounting and organizational control literature, the economic object is pre-given in terms of the legal entity of the company. Boundaries are assumed unproblematic and taken for granted. Accounting is used to coordinate activities, resources and actors within the company and any coordination with other companies is done via the market mechanism (Chandler & Daems, 1979). Voices have been raised from the field of accounting urging research to expand the horizon beyond the established legal entity of the company (Hopwood, 1996; Otley, Broadbent, & Berry, 1995). The development of the modern business landscape to become increasingly networked also indicates a need to look beyond traditional company boundaries. Strategic alliances, outsourcing, supply chains and R&D cooperation is part of everyday activities in many of today's companies (Castells, 1996; Håkansson, Ford, Gadde, Snehota, & Waluszewski, 2009; Håkansson & Olsen, 2012; Malerba, 2006; Miller & O'Leary, 2007; Zeitz, 1980). This development leads to new questions about the meaning and importance of boundaries and the relationship between accounting and boundaries (Ford & Håkansson, 2010; Håkansson, Kraus, & Lind, 2010a). The company as a bounded entity becomes no longer the only, perhaps not even the obvious, object of interest. More important, the boundaries of where a company begins and ends are no longer evident.

One important issue which have been identified in the growing field of research on accounting in networks (Håkansson, Kraus, & Lind, 2010b) is the one concerning boundaries. What alternative boundaries can be relevant? Some research focus on accounting in inter-organizational relations where the boundary have been drawn around two organizations and their relationship (Neumann, 2010; Dekker, 2004; Berry, Coad, Harris, Otley, & Stringer, 2009) or around a joint venture and its owners (Groot & Merchant, 2000; Kamminga & Van der Meer-Kooistra, 2007). But why draw the boundary there? A network is by definition without boundaries; stretching out in all directions and without any center (Prenekert & Hallén, 2006), and it is possible to think of alternative boundaries around certain specific activities and resources (Håkansson et al., 2010a: 344). For example, Lind and Thrane (2010) identify five different ways to understand and analyze inter-organizational relations, ranging from a dyad to complex networks through chains, many counterparts up- or down-stream and various customers and suppliers. How and where the boundary is set is arbitrary, always making any given network partial, under construction and dependent on who draws the boundary and by which tools (Prenekert, 2012). Furthermore, networks have no hierarchy (Håkansson, et al., 2009) and no strategic center (Mouritsen & Thrane, 2006: 242). From an accounting perspective this poses great challenges.

## PURPOSE AND CONTRIBUTION

The purpose of this paper is to develop our understanding of the relationship between accounting and delineated entities of inter-dependent activities and resources in networks. Specifically we



aim at an increased understanding of the role of accounting in the creation of boundaries, but also as a tool that enables transcendence across boundaries.

Such an understanding includes an ability to map out how something plays out in various empirical settings, but also to be able to explain the mechanisms behind these developments. This paper focus on the latter and in so doing we seek to identify and deconstruct the social mechanisms (Gross, 2009; Mason, Easton, & Lenney, 2011) that control the relationship between accounting and the creation of boundaries around certain sets of activities and resources – the performative role of accounting.

In order to develop a better understanding of the relationship between accounting and boundaries in networks, we review the literature on accounting and on boundary objects, which will be used to conceptualize the boundary creating and transcending capacity of accounting in networks. This literature review will provide the basis for a conceptual analysis of the relationship and what the concept of boundary objects can contribute with to enhance our understanding of this issue. We end with the formulation of a set of propositions, which can be used to inform further empirical investigations into the matter.

In this paper we show how the concept of boundary objects (Hendersen, 1991; Star & Griesemer, 1989) is helpful to develop an understanding of the role of accounting in networks. Boundary objects have been used to understand the role of private labels as resources in industrial networks (Prekert, forthcoming) and to explain power dynamics in networks (Harrison, Hoholm, Olsen, & Prekert, 2011).

This paper contributes with an understanding of the performative role of accounting in networks explaining how it creates effects in terms of specifically delineated and bounded sets of interconnected activities and resources with the purpose to economize on certain contexts and situations. We also contribute with conceptualizations of these effects and their underlying mechanisms, which lead up to a set of propositions.

## THE PERFORMATIVE ROLE OF ACCOUNTING IN NETWORKS

A common point of departure in inter-organizational accounting literature is that the boundary setting is a result of management decisions on minimizing costs and that accounting control is wielded within these set boundaries (Anderson & Dekker, 2010; Kulp, 2002). In an inter-organizational context this focus have spurred investigations of accounting control in relationships between two parties and only a few exceptional investigations of formal networks (Håkansson & Lind, 2007; Håkansson & Lind, 2004; Kajüter & Kulmala, 2005; Mouritsen & Thrane, 2006). A recurrent theme in the extant research has been on how to design accounting control systems so as to minimize opportunistic behavior (Baiman & Rajan, 2002; Neumann, 2010). Some studies have directed attention on how accounting control is used to coordinate

activities across company boundaries (Agndal & Nilsson, 2009; Dekker, 2004). The common trait in these studies is that the company boundary and the role of accounting for the creation and function of boundaries are not problematized.

In this study we emphasize the performative role of accounting in networks. This means that we focus on the role of accounting for the creation, use and function of boundaries in inter-organizational contexts. We address the overall issue of how accounting is used to both break up and uphold existing boundaries. How a given actor use accounting in a network affects how boundaries are drawn (Håkansson et al., 2010a) and how what ends up inside these boundaries are organized (Mouritsen & Thrane, 2006). We are concerned with how accounting is used as a tool to perform the task of defining boundaries and in this circumstance it is fruitful to draw on the concept of boundary objects (Hendersen, 1991; Star & Griesemer, 1989). Seeing accounting as a boundary object allows us to problematize how and why accounting can be used as a tool for boundary setting while providing a conceptualization of the performative nature of accounting.

### Accounting and Boundary Objects

Drawing on the notion of boundary objects to cast light on the performative nature and character of accounting in networks requires us to first clarify what we mean with boundary objects.

A boundary object is defined as an object that is “...plastic enough to adapt to local needs and the constraints of several parties employing them, yet robust enough to maintain a common identity across sites” (Star & Griesemer, 1989: 393). This means that it is something that can adapt to various contexts yet retain a unique and stable identity, or perform a stable role irrespective of varying contexts. The main feature of a boundary object (as opposed to, for example epistemic objects (Knorr Cetina, 1997)) is its specific ability to enable actors to “...specify and learn about differences and dependencies...” (Nicolini, Mengis, & Swan, 2011: 5) across various contexts and boundaries. It also provides “...a form of reification around which the practices of the various actors [...] can be coordinated” (Nicolini et al., 2011: 5).

Boundary objects functions as important tools to create common frames of reference among actors in dynamic contexts characterized by such network features such as a lack of hierarchy and a strategic centre and where resources and knowledge are distributed (Oswick & Robertson, 2009). The concept has been used to understand the role of private labels in networks (Prenekert, forthcoming) and to understand power dynamics in networks (Harrison et al., 2011). Empirical studies have shown that power is an important aspect of boundary objects (Bechky, 2003; Kim & King, 2004) because they can both induce change and be used to draw new boundaries by acting as ‘bridges’ and ‘anchors’ (Star & Griesemer, 1989: 414. In addition, boundary objects can act as ‘barricades’ and ‘mazes’ meaning that they can function as hinders for change and as smoke and mirrors to confuse actors (Oswick & Robertson, 2009: 190. In the former case, boundary objects are used to connect things, whereas in the latter they are used to disconnect things. This duality is

an important feature of boundary objects for our purposes of discussing the connecting and disconnecting of things in networks. This is because connecting two specific things always imply not connecting to other things and sometimes even disconnecting some other things before the new connecting can be done. This is because very seldom in networks are there any free resources floating around ready to be connected and utilized. Rather, resources are usually already 'taken' and already connected to other resources, actors and activities. The conceptualization of boundary objects comprising not only bridging and anchoring capacities, but also barricading (or hindering) and mazing (or confusing) capacities as well, is important and useful when applying it on accounting in networks.

### The Capacities of Boundary Objects in Networks: Discussion and Propositions

Viewing the use of accounting in networks as a type of boundary object with four core capacities allows us to systematically discuss the implications in a networked context. In this way we can explore the performative role of accounting in networks. In this section we shall detail what we mean by this and substantiate our claims. If the use of accounting in networks follows the capacities of boundary objects, then we can begin with acknowledging its bridging features.

Following from this it seems plausible that accounting can be used to bridge across boundaries. This is probably the most straightforward understanding of boundary objects and stems from the now classic work of Star and Griesemer (1989). From a network perspective this means that an actor using accounting in this capacity deploys a connecting process to connect to other activities, resources and actors. Such complex multiple connections between activities, resources and actors in networks have been defined as business relationships (Håkansson & Johanson, 1992; Håkansson & Snehota, 1995), but for our purposes it is conducive to re-conceptualize such connections as *network interfaces*. The reason is that business relationships often connotes thin links connecting between fat nodes, and this is an imagery that is very far from our conceptualization here of accounting in its performative role as a boundary object in networks. Rather, this conceptualization of the role of accounting in networks produces a business landscape made up of complex, multilinked, multimodal, multidimensional interfaces between sets of activities, resources and actors. In addition, such interfaces can be created and bound around any given set of activities, resources and actors, independently of the legal status of any entity that relate to these network elements. Therefore our use of the term *network interface* rather than business relationship.

Now, returning to the bridging capacity of accounting, this means that an existing boundary is being transcended in a process of opening up to explore the partly unknown. This induces truly novel connections and changes the current network forming new connections and network patterns. The motive behind this use of accounting is an ambition to reach out into the network and to discover and explore alternative novel connections – to explore network interfaces. This

type of use of accounting in its bridging capacity seem plausible to find in empirical accounts of, for example, new ventures, market development, and innovation and technological development during the explorative phases where this connecting mechanism is utilized.

An example of this is the cooperation in buyer-seller relationships where open-book accounting can be used to improve efficiency and to bridge and connect the two entities tighter to each other.

Accounting can also be used to anchor something in an existing structure in the network. In network terminology this equals mobilisation of support for a certain set of connections between activities, resources and actors – what we here have called network interfaces. Such network interfaces are continuously challenged and contested by alternative constellations and anchoring a certain interface in the network by the use of accounting in its anchoring capacity creates stability and predictability to it. This use of accounting functions as a way to set, or to establish firmly a suggested novel network interface that may have been discovered during a transcending process utilizing the first boundary object capacity of accounting. In this case, the motive behind this use of accounting is to bring in and to bind the previously unbound and to set a boundary around a given constellation of activities, resources and actors – to define a certain network interface. Examples of this type of use of accounting in its anchoring capacity seem plausible to find in empirical accounts of in technological development and cooperative arrangements around product and process-development where a novel boundary is set by this reinforcing mechanism so as to withheld change attempts from other actors. Accounts of cooperative agreements, contracts and joint ventures can all be empirical manifestations of this anchoring capacity used to define network interfaces and to give them a shared identity.

In both these capacities discussed above, accounting is used to connect network interfaces to each other. But accounting can also have the performative role of disconnecting network interfaces, or prevent attempts at exploring and defining network interfaces. This is the network process involved in the use of accounting in its barricading and mazing boundary object capacity.

Accounting can be used to barricade a certain network interface preventing it from being accessed by others and disconnecting it from other interfaces, thus having an isolating effect. In this capacity it seem plausible that accounting can be used to uphold a certain boundary set around a certain network interface in order to protect it and to buffer it from change attempts. This type of network process and interface effect is crucial to any actor seeking to stabilize and to economize in networks, as it enables predictability and stability so as to create economic returns. Without this isolating effect, it is very difficult to accomplish anything in a network where interfaces are continuously challenged and subjected to change attempts. It seem therefore highly plausible that this type of use of accounting in its barricading capacity can be found in empirical examples of accounting in networks as a way to stabilize and economize in networks. The motive behind this use of accounting is to protect a given pre-defined constellation of activities, resources and actors – to isolate a network interface. This type of use of accounting in its barricading capacity seem plausible to find in empirical accounts of, for example, technological

cores (Thompson, 1967) where the core is buffered from the surrounding network through the isolating mechanism of the barricading capacity of accounting in networks. This is probably one of the most common empirical accounts of the performative role of a boundary object in business networks.

Finally, drawing on the conceptualization of accounting as a type of boundary object with a mazing capacity, it can be used to hide a boundary by attempting to confuse other actors. In this way, an actor can attempt to hide the specifics of a network interface from discovery by others, or disguise it to look like something it is not, etc. By applying the old and well-known smoke-and-mirror trick, actors can cloak the appearance of interfaces in order to confuse other actors. The motive behind this use of accounting is to confuse others about the specifics of a given pre-defined constellation of activities, resources and actors– to cloak a network interface. This type of use of accounting in its mazing capacity seems plausible to find in empirical accounts of, for example, innovation, R&D, and product-development projects, where the disclosure of certain details concerning some interfaces is reduced by this mechanism.

An example of the mazing capacity of boundary objects in networks can be found in some modern retail organizations where certain boundary objects are used to cloud matters and to create opaqueness and non-transparency (Harrison et al., 2011). In another sector of our economy, the creative use of various types of financial instruments and accounting techniques in relation to the reporting of the standings among banking institutions during the most recent financial crisis is yet another example of the same use of boundary objects in accounting.

Table 1 summarizes the discussion of the performative role of accounting in networks conceptualized as a type of boundary object so far. It depicts the four boundary object-capacities to the far left and details the related network processes, boundary issues, motives and effects on the network interfaces, respectively.

*Table 1. The performative role of accounting in networks*

<i>BO-capacity</i>	<i>Network process</i>	<i>Boundary issue</i>	<i>Motive</i>	<i>Network interface effect</i>
Bridge	Connecting	Transcend boundary	Reach out	Explore
Anchor	Connecting	Set boundary	Bring in	Define
Barricade	Disconnecting	Uphold boundary	Protect	Isolate
Maze	Disconnecting	Hide boundary	Delude	Cloak

Relying on the discussion above we suggest the following four propositions for the performative role of accounting in networks.

PROPOSITION 1: Accounting can be used to bridge across network interfaces in networks to make novel connections. In this way, *accounting can be used to explore network interfaces*.

PROPOSITION 2: Accounting can be used to anchor a given network interface in other interfaces in order to stabilize novel connections. In this way, *accounting can be used to define network interfaces*.

PROPOSITION 3: Accounting can be used to barricade a network interface in order to protect it from novel connections. In this way, *accounting can be used to protect network interfaces*.

PROPOSITION 4: Accounting can be used to hide network interfaces from others in order to delude novel connections. In this way, *accounting can be used to cloak network interfaces*.

From this, it seem as if the creation of new network interfaces comprise the utilization of all four capacities of accounting in its performative role, starting with the first and ending with the fourth. In the earlier stages of network interface creation the bridging and anchoring capacities enabling the exploration of interfaces and the subsequent definition is crucial. Once this is accomplished, it becomes important to protect and sometimes even to cloak interfaces in order to prevent them from being hi-jacked, and changed in some other actor's favour.

In this way, the dynamics of networks can be conceptualized as processes of wielding the powers of boundary objects in its four capacities. As already recognized, power is an important aspect of boundary objects (Bechky, 2003; Kim & King, 2004), and the conceptualization of the use of accounting in networks as a type of boundary object emphasize this in its performative role. Our discussion here is in line with the findings of Mouritsen and Thrane (2006) discussing the obtrusive and non-obtrusive effects of accounting. Based on our discussion above, we can show a detailed, systematic and nuanced conceptualization of *the way* in which accounting is obtrusive respectively un-obtrusive, *by what mechanisms*, and *in what likely circumstances*.

#### CONCLUDING COMMENTS

In this paper we have conceptualized accounting in networks in a way that comes close to Mouritsen and Thrane (2006) discussing accounting as obtrusive and un-obtrusive. But while

drawing on the work of Mouritsen and Thrane (2006), we have extended the analysis to include a refined understanding of the role of accounting in transcending and setting boundaries in a *networked* context, not only in a dyad. Furthermore, while not drawing on Actor-Network Theory (ANT) as Mouritsen, Mahama and Chua (2010) do, we have developed a similar understanding of accounting as fulfilling a *performative* role in defining and drawing boundaries around certain collections of activities and resources, in addition to Mouritsen and Thrane (2006) that discusses the structural role of accounting in a pre-given dyadic context. Overall, our main findings emphasize the performative role and importance of accounting to draw boundaries around certain collections of interdependent activities and resources in networks – what we term network interfaces.

If we assume that one can see accounting as a type of boundary object that is used to transcend boundaries as well as with the power to protect old boundaries and to create new ones, an interesting array of questions emerges that are worthy of further inquiry. First, are accounting (as a boundary object) robust enough to perform these roles irrespective of different contexts? For example, can one find situations where accounting becomes too ‘weak’ to be able to transcend, protect and create boundaries? Can we find empirical examples of when the accounting withers and disintegrate due to contextual pressures? Second, are accounting (as an object) plastic enough to be adaptable to different contexts? When are accounting too ‘strong’ to have an important role in setting boundaries? Can we find empirical examples of when the accounting dominates over contextual pressures? These are all questions requiring empirical investigations and such research efforts are probably a natural extension of this study. We hope that such research efforts are presented in the future.

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# **Tensions in Attention between Budgets and Balanced Scorecard information: A Case Study of A Telecom Company in Distress**

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## **1. Introduction**

This paper explores how combination of budget oriented and the Balanced Scorecard (BSc) oriented control system can create confusion and tensions for top and line managers in a telecom company under financial distress. We are interested in the link between experiences of being in a crisis and attention giving to different management control information tools (such as budgets and BSc). Previous studies in the strategy literature have shown that under normal circumstances managers of surviving firms pay equal attention to the information of the internal and the external environment. When a crisis of demand decline occurs, they pay more attention to the critical aspects of their external environment. In contrast, managers in failing firms deny or ignore output factors during crisis and pay more attention to the input and internal environments (D'Aveni and MacMillan, 1990).

In the management control literature there is very little done in order to understand organizations under financial distress and especially what information managers focus their attention on and why under these conditions. There is however a comprehensive literature on the use of the BSc and when it can be a suitable tool (Catasus et al, 2007; Olve et al., 2003, REF). In this paper we are however not interested in the use of BSc as such, instead we are interested in what kind of information that are given attention when a company comes in distress and what consequences that have for decision making.

To date, there has been very little empirical work on the focus of attention by managers at different levels, who are in severe trouble. There is research describing how organizations make excuses when not fulfilling the financial obligations such as keeping the budget (Nyland and Pettersen, 19xx) but not on attention giving. In this paper we answer a call for research focusing on how attention is giving to information when in a severe crisis (D'Aveni and MacMillan, 1990).

Theoretically, we use theories that explain how attention is given to strategic and operational information. The argument is that firm behavior is the result of how firms channel and distribute the attention of their decision-makers. The theories help us to understand what decision-makers do depend on and what issues and answers they focus their attention on (Ocasio, 1997; March & Olsen, 1976). In line with Ocasio and Joseph, (xxxx) we view strategy formulation processes as fragmented and contested, with multiple foci of attention, rather than an explicit objective function, and both top-down and bottom-up processes capable of generating changes in the strategic direction of the firm. Therefore, we focus on both top managers and line manager's attention.

In this paper, we explore tensions experienced by line managers in a telecom company under financial distress regarding the use of information for operational decision-making and control. Investors and top managers in the company experience financial distress and their perception seems to differ concerning what should be done in order to improve organizational performance compared to the perception of the line managers. These two perceptions came into conflict when the investors and the board wanted a more financially performance-oriented focus. Financial information found in the company's budgets should signal the new organizational course of action to the line managers. However, this was very different to what the line managers experienced they should do, motivated by use of the company's Balanced Scorecard (BSc). As MIS can be conceptualized as a package of different control tools (Malmi & Brown, 2008), the actors of the organization studied seemed to use different parts of the system for different purposes and sometimes even for conflicting purposes.

The aim of this paper is to provide an understanding of how these conflicts in information attention emerged and in what sense these tensions could be attributed to the conflicts built into the design of the company's MIS. Particularly, whether and how the use of information from MIS is difficult to reconcile based on combining budget-oriented and BSc-oriented systems?

The paper is structured in the following way. First, we position the paper in an attention perspective; then, we provide a literature review where we focus on addressing information conflicts between budget-based vs. BSc-oriented (BSc) control systems. Thereafter, we present the data collection strategy used in the study. The empirical part consists of a description of the telecom company, including narratives about how attention is given to information by managers. Discussion and conclusion follow. We also provide directions for further research.

## **2. Crisis and attention on information**

We define a crisis as any relevant or condition that threatens the survival of the organization (Starbuck et al. 1978). One such crisis is declining or stagnant demand resulting in bankruptcy. Several theories predict how senior managers might respond to an external crisis such as decline in demand, but these theories gives contradictory answers. Under the threat-rigidity responses theory and crisis-denial theories, a crisis is expected to divert a manager's attention away from the locus of the crisis (Kriesler and Sproull, 1982). Environment scanning and stress theories predict that managers will pay more attention to the external crisis because of the importance, and uncertainty of the issue (Dutton, 1985). D'Aveni and McMillan (1990) explain the differences in the literature with the argument that it depends on if firms are survivors of a crisis or not. D'Aveni and McMillan (1990) further argue that the differences in behavior are related to the focus of attention from top management.

We agree with D'Aveni and McMillan (1990) and will also in this paper focus on how managers focus their attention. We however, differ in the sense that we do not only study the top managers but also the line managers. Furthermore, we do not only focus on the information given to investors but also the interaction and information with the line managers.

To make our analysis we use Shrivastava (1983) framework – 4C. This frame suggests that crisis studies can focus on four key aspects of the crises: causes, consequences, caution and coping. Causes include the immediate failure that cause the crisis and the antecedent conditions that allowed failure to occur. Consequences are the immediate and long-term impacts. Caution includes the measures taken to prevent or minimize the impact of a potential crisis. Finally, coping comprises measures taken to respond to the crises that have already occurred. By using the 4 C framework we highlight the similarities and differences between the top management and the line manager's views and integrate them into a crisis management model.

Before we describe the case, we theoretically describe the difference between the budget and the BSc. Resent research in MIS has focused more on the integrative rather than the conflicting nature of information packages (Malmi & Brown, 2008). Conflicts and tensions between the use of control tools in an organizational control package is thus a less researched topic (Vaivio, 1999; Jørgensen and Messner, 2010). We are interested in finding out to what extent the use of budgets is/can be coordinated with the use of BSc and do these two tools operate synchronically or in competition? In this part, we explore research literature regarding these questions. First, we focus on discussions of what are the design principles and characteristics of MIS based on Budget vs. BSc. Second, we focus

on different use aspects of budget vs. BSc-based MIS. Finally, we explore the possible tensions between budgets and BSc in an organization that experiences distress.

### 2.1. Budgets vs. BSc: Differences in Design Principles

In theory, systems of controls should be designed to balance and allow adaptation to the information needs on each organizational level (Otley, 1980), which means flexibility that meets needs on different levels (Nilsson, 2002). According to Bjørnenak & Olson (1999), organizations need many types of MIS as different systems can be used for different purposes. The extremes would be a local MIS, focusing on operative processes, vs. a strategic MIS, supporting processes on the strategic level. There should be a system coordinating between the levels.

There are, however, different ways to achieve alignment between systems on different levels and the nature of this alignment can have different implications for decision-makers in the organization (e.g. Dossi & Patelli, 2008). The Budget (which here means the annual budgets) and the BSc can separately fulfill the coordination role between the central and local systems. The problem, however, will be the implementation of both systems at the local level. Local systems should focus on needs of the line managers acting in this sense against information embedded in centrally institutionalized systems in order to stimulate organizational learning (Bjørnenak & Olson, 1999) and helping managers to better understand their business environments (Hedberg & Jönsson, 1978). From this perspective, the Budget and the BSc are in many ways two principally different information systems as they aim at different purposes and essentially have different characteristics (see table 1).

**Table 1. Differences in Design Principles of Budget and BSc-based MIS**

	<b>Budget</b>	<b>BSc</b>
<b>Field of accounting</b>	Responsibility accounting	Strategic management accounting
<b>Purpose</b>	Corporate Governance/ Financial control	Strategic adaptation/ Strategy implementation
<b>Time focus</b>	Annual/short term	Strategy/long-term
<b>Scope</b>	One-dimensional, financially oriented indicators	Multidimensional, both financial and non-financially oriented
<b>Intended use</b>	Individual controllability and accountability	Organic decision-making and communication for strategic renewal

<b>Implications for local managers</b>	Coercive	Enabling
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Budgets are mainly adopted as a device for organizing responsibility accounting in divisionalized organizations (e.g. Scapens, 1995; Pelej, 1958). One of the most important functions of budgets is to assign responsibilities and enable top-down control. In this sense, budgets are tools of corporate governance at a distance in a chain of hierarchically assigned responsibilities and performance expectations (Quattrone & Hopper, 2005), e.g. from investors to top executives and further towards managers of corporate divisions and units. Understanding it in this way, corporate investors can have important impact on the design of organizational MIS and the investors' focus on the financial performance can legitimize the use of budget (Ryan, 2007). Because capital markets have power over organizations, the use of budgets can provide external organizational credibility and legitimacy by being a tool for communication between investors and top managers in both formulating expectations for and monitoring realized financial performance.

This notion of a budget as a governance tool is in sharp contrast with the critique of budgets from the perspective of management accounting practice. For instance, the relevance lost critique (e.g. Johnson and Kaplan, 1997) is attributed to the extensive use of financially oriented information in the organization, which is also relevant for the use of budgets. As a management accounting tool, financially oriented information is less relevant for decision-makers in order to achieve organizational renewal and strategic adaptation, especially in conditions of turbulent business environment. Budgets are also perceived as problematic for strategic management since they focus on short-term cost minimization rather on long-term value maximization (Atkinson, 2006).

Designing a MIS that provides relevant information for strategy formulation and implementation is a main emphasis in relevance regained literature (e.g. Johnson, 1992). BSc is a proposed solution to improve the relevance of information for local decision-makers as well as its alignment with the information needs of top managers (Kaplan & Norton, 1996). Strategy should be formulated and translated to all parts of the organization through the set of the balanced financial and non-financial indicators, which are supposed to be linked into a coherent multidimensional managerial model (Nørreklit, 2000). Thus, BSc is designed to address a number of significant weaknesses of traditional management systems, which are usually associated with budgets and promises to establish a better link between strategy and operations (Atkinson, 2006; Lynch & Cross, 1995). In this way, BSc can function as a communication device that can unite interests of investors and managers regarding information on different levels of hierarchy around the strategy.

From Table 1, the conclusion is that the basic design principles of MIS based on the Budget and the BSc are very different. While the BSc rhetoric focuses on strategic renewal by enabling organic decision-making and communication, the budget stresses individual level controllability and accountability in the schemes of responsibility accounting. In terms of Ahrens & Chapman (2004), by creating specifications in advance of possible eventualities and showing little adaptation to local needs and changing organizational circumstances, budgets constitute a “coercive” MIS design. On the contrary, the BSc is more “enabling” in its design by its focus on discrete information selection and promise of a better match to local information needs without undermining the established hierarchical relationships.

From the discussion above, it is not necessarily clear that a combination of budget and BSc in one MIS should be a problematic affair. On the one hand, from the point of view of MIS designers, the integration of budget and BSc is compatible (Otley, 2001; Bungay & Goold, 1991). Malmi & Brown (2008) considered these two systems as two parts of a wider organizational control package. For Simons (1995), the budget and the BSc could coexist as part of both diagnostic and interactive levers of organizational controls. There is, on the other hand, a rising critique from practitioners that stresses the impossibility of combining budget and BSc as a control tool - not because their design is principally incompatible, but because of the incompatible organizational behavior arising from this combination (Bogsnes, 2009; Ahn, 2001; McNair et. al. 1990). The question, therefore, is what are the implications for use when having both a BSc and a Budget in one control system.

### *2.2. Budgets vs. BSc: Conflicts in Use?*

In general, the use of information can deviate dramatically from what is intended by MIS design (Mouritsen, 2005; Mellempvik, et. al., 1988). For instance, strategy oriented MIS can be used for administrative/controlling purposes (Bogsnes, 2009) while administrative tools can sometimes be used for strategic purposes (Marginson, 2002). Even the same control tool can be used in different ways depending on an organization or a situation, e.g. in a coercive or enabling way (Ahrens & Chapman, 2004). Thus, a well-functioning MIS package as a whole will require adjustments, learning and resolution of information conflicts between the different elements built into the system (Nilsson, 2002).

Paying attention to the above-mentioned statements, it seems that concern is rising in the literature about the simultaneous use of budgets and BSc-based systems in organizations (Bogsnes, 2009). The critique comes from at least two directions. Firstly, it is recognized that there is an increasing

incompatibility between corporate top executive use of budgets and BSc for different purposes of external and internal management. The intended role of corporate managers is to manage organizations that are entrusted in their hands in order to create economic value for investors. Annual budgets can be thus considered as a convenient tool for the corporate level in the organization to monitor responsibilities of subordinates and also serve as a communication device with the capital markets. Indeed, the use of budget still signals legitimacy to external stakeholders: that the organization is under control and manageable (Bhimani, 2009). Kraus & Lind (2010) found that pressure from capital markets for financially oriented information legitimizes the use of short-term financial indicators: meaning that e.g. there is very limited impact of using BSc for external purposes. In this sense, it can be problematic for corporate managers to use one set of measures for communicating with external actors and another for internal actors. Following from that, corporate managers can emphasize the use of MIS, which are easily suited to both purposes of external legitimation and internal responsibility accounting, i.e. where they would be more able to focus on budgets and downplay the BSc.

Secondly, the use of budgets and use of BSc can have different behavioral consequences in organizations. Implications of the simultaneous use of both systems can be difficult to reconcile at the local level. There can be a dynamic tension between the coercive and enabling uses of different MIS (Meer-Kooistra & Scapens, 2008) and between the use of financial and non-financial information (Bhimani & Langfield-Smith, 2007). While budget presupposes the coercive use of MIS, what is probably needed in modern organizations on their local levels is to enable the use of MIS (e.g. with more emphasis on use of BSc). In this sense, new types of organizational structures introduced in many larger organizations (e.g. team/project based, local networks) and maintenance of budgets as a main control tool is becoming increasingly incompatible. Bogsnes (2009) claims, for instance, that a combination of BSc and budget is a complicated marriage because information has different and often conflicting implications for managerial behavior.

Despite the fact that some organizations can reconcile the dysfunctional behavior consequences of the use of budgets by complimenting these with other types of (more informal) control mechanisms for strategic renewal (e.g. Frow et. al., 2005), there is still little evidence of how the conflicting behavioral implications of using both budgets and BSc are reconciled. In organizations with strong hierarchies, local managers can have difficulties in bypassing the formally established authority lines of responsibility accounting. Implemented by senior managers and anchored in the use of budget, these formal power lines can make it difficult for local managers to ignore or sabotage the budget as



a control tool in favor of other control tools (for instance, what is possible in organizations with strong professional values and cultures; see e.g. Abernethy & Vagnoni, 2004; Nyland, Pettersen and Østergren, 2009). A budget also has a comforting role for managers; while use of stand-alone BSc systems are risky as they may cause decision-makers to have much greater uncertainty (Bourmistrov & Østergren, 2011; Bogsnes, 2009). This means that in a game of performance it is easier and safer to rely on information from “budgets” than on information from the BSc. In summary, the use of Budgets and BSc simultaneously can be rather problematic in an organization because they can produce different behavioral implications for the local managers, which can induce tension between the managerial levels. The next question is how the conflict of using budget and BSc is nuanced in a company that experiences a crisis situation.

### *2.3. Use of Budgets vs. BSc in Financial Distress Situations*

Situations of financial distress are an interesting context to study because the use of controls and changes in their use are becoming more visible compared to situations of organizational prosperity (Czarniawska-Joerges, 1988). The natural response of managers to economic problems is to tighten controls in order to maintain legitimacy regarding the internal and external parties and to signal that a crisis has arrived and something should be done about it. More generally, in hostile (e.g. stressful, dominating, restrictive) and turbulent (e.g. risky, unpredictable, fluctuating, ambitious) environments, a situation of crisis can be a more permanent phenomenon and in such situations, organizations tend to rely on formal control tools such as a budget because they can also function as organizational stabilizers in times of turbulence (Chenhall, 2003). The problem is that tightened controls will result in organizations losing their flexibility and ability to respond to local opportunities and problems. Thus, organizations in crisis or with extreme pressure from their environment, which causes them to initially tighten control. However, over time they are faced with a need to replace this tight control with a more flexible control (Chenhall, 2003; Czarniawska-Joerges, 1988). Another way to deal with extreme pressures and crisis is to de-couple or loose-couple the use of controls and realized actions (Høgheim et. al. 1989, Nyland and Pettersen, 1996; Meyer and Rowan, 1977).

Based on the discussion above, it is interesting to study how organizations which operate in turbulent environments under the conditions of financial distress, are dealing with problems of how to balance the use of a budget and a BSc. The literature review suggests that the budget can be an important tool for tightening control in times of financial distress. What is the role of information from the BSc in such situations for the line and corporate managers? What are the tensions from the perspective of behavioral implications of using both a budget and a BSc?

### 3. Method

The choice of the company for this study was in some way a coincidence. One of the authors had supervised master candidates who attended management control specialization courses during the master program and wrote a project work assignment about a company where they were working as controllers. However, this routine assignment, which was meant to focus on a description of management control systems (MCS) in TelCo, has turned out to be somewhat unusual as the students discovered that there seemed to be tension, frustration and confusion related to how management control was functioning in the company. The empirical context was especially interesting since the confusion and tension were related to the company being in financial difficulties and also the ways information in which both budgets and the Balanced Scorecards were used. These settings attracted attention from the authors of this paper as both of them were at the same time also involved in a larger research program focusing on studying the new generation of MCS systems (sometimes termed "Beyond Budgeting") as part of the critique of the annual budgeting as well as the philosophy behind it.

This interesting and unusual setting in TelCo motivated the authors of this paper to establish a research group for planning and realizing data collection, analysis and interpretations. The main idea was to study in-depth how these conflicts in information use emerged and in what sense the tension could be attributed to the conflicts built into the design of the management control system. The primary data collection was performed in several steps: partially in the fall of 2009, but mainly during the spring of 2010 (see Gabrielsen & Jelstad, 2010<sup>1</sup>). Some additional enquiries and clarifications were made in early in the spring of 2011. This primary data collection was combined with data collection from both closed sources (e.g. TelCo's budgets, reporting guidelines) as well as open sources, including newspaper publications about the company, analytical articles and information on the Internet, etc.

Our strategy in developing this empirical material can be summarized as follows. We used the interviews to collect and create the description of how respondents perceive challenges for management control functioning. We chose to collect data through a convenience sample from the managers to which we had access. There could be a danger in that choosing these managers could have created a bias where our respondents were more critical towards MCS. However, we evaluated

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<sup>1</sup> Gabrielsen, S. & Jelstad, L. (2010) 'Beyond Budgeting – Den rette medisin? En studie av økonomistyring i TelCo', Master Thesis.

this as not being a problem, since we were not interested in finding out whether the respondents were negative to MCS practice, but to explore what is the nature of the challenges they experienced and why, thus providing us with necessary information about conflict and tension.

Even though we have had close contacts with the company, the case study conducted was of an exploratory, non-interventionist nature (Lukka, 2005). The target was to refine prior theory (Keating, 1995). Our aim was to understand the social world of managers and the functions of such social constructs as management controls in the light of the context of managerial work (Alvesson & Sköldbberg, 1994). We asked open-ended questions to allow interviewees to explain the challenges they experienced and to link these challenges to both their managerial practices and the information they put attention on. Thus, the focus in each semi-interview was on the following major themes: a) what **caused** the crisis, b) how did they **cope** with the crisis and what **caution** action was taken, and c) what kind of **consequences** did they expect from the crisis and how could the in what challenges did they meet with the existing information from the management control systems (for more detailed interview guide see Table A.1 in Appendix A). Primarily, data was collected from 5 semi-structured interviews, each taking around 1 hour (see Table B.1 in Appendix B for respondents). The respondents were 2 top managers on the level of the corporation and 3 line managers.

In order to increase the validity of our own subjective understanding of the data, we transcribed and analyzed all information piece-by-piece. We also verified the interpretations by sending all interview transcripts back to the informants for feedback. They commented on facts and also provided us with more background to some issues in the interviews. We also discussed the meaning of findings in the research group. The experience of interpreting the confusion and challenges expressed by the managers was close to interpreting a “foreign text”. The interpretation work done by the group can be understood in more general terms as “following the steps of hermeneutic cycle”, i.e. the study of any kinds of texts in the hermeneutic tradition. We searched for deeper meanings behind the constructed texts and understanding emerged as a result of a dialogue between the text, the interpreter and the interpreter’s emerging knowledge of the text (Lee, 1999; Alvesson & Sköldbberg, 1994). When writing the paper and presenting data from interviews, concepts and categories, the intention was also to be inter-subjective, i.e. allow the readers of the article to disagree with our interpretations. This has been done by including the practical examples, references and quotations.

#### **4. The Case Management Control in a Telecommunication Company TelCo**

Today, the TelCo Company is the second largest producer of complete telecommunication services to private and businesses customers in Norway. The company is owned by several Norwegian regional and national energy and broadband companies. The vision of the company is to be the largest and the best challenger of established providers of telecommunication services in the Norwegian market. This vision is intended to be materialized by providing the best customer experience through effective service and by increasing the range of high-speed broadband and mobile telecommunication services offers.

The articulated competitive advantage of the company is said to be the access to a rather wide telecommunication infrastructure, a large customer database and the wide range of services provided. The company was built through a chain of strategic expansions and has expanded its operational volume during the last several years by a number of takeovers and acquisitions of other regional and national telecommunication companies. The strategy was to acquire broadband companies with an established customer portfolio and infrastructure in order to gain economy of scale and cost-efficiency. Some of companies TelCo has taken over had gone bankrupt or were on the edge of bankruptcy.

Today, the company owns the fiber optic networks, which were built in connection with the network of railroads and electricity supply infrastructure all around Norway. The fiber network controlled by the company links around 80 cities. The fixed telephone and broadband networks have a high level of reliability of services because information flow can be redirected to alternative routes in case a breakdown in one part of the network should occur. In addition, this network is under surveillance 24 hours a day in such a way that the network is operational 99.99% of the time.

TelCo operates in a dynamic industry with a high level of turbulence and with many dramatic changes. Many acquisitions and buyouts are essential characteristic of TelCo's domestic market. This means that the number of major market actors is constantly decreasing at the same time as TelCo becomes larger. Under such conditions, price competition becomes more serious. This is also a result of interventions from the domestic telecommunication authority<sup>2</sup>. The increasing price competition requires a cost efficient production for the companies. In addition, continuous technological changes require the continuous monitoring of innovations and a readiness to quickly make necessary investments in new technologies to be able to stay and compete in this market.

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<sup>2</sup> The Telecommunication Authority stipulates reduction in the prices that companies require when their customers call to other customers at other companies (reduction by 75% until January 1, 2013 from the level at which it is currently).

Traditionally, TelCo specialized in fixed line telecommunication services for business customers, but over time, the company decided to expand into the market of mobile telecommunication for both private and business customers as well as to include services related to fixed and mobile broadband. However, it seems that the company has not yet managed to find a way to compete in this new and competitive market. Experts analyzing the company claim that there is a clear deviation between the stated vision of being a low cost producer and TelCo's actual prices for its services. For example, advertisements focus on cheap subscription prices, but benchmarking with competitors reveals large deviations in prices meaning TelCo is not yet a low price producer. Thus, the main focus for more successful operations on the mobile telecommunication market is mostly related to private subscriptions that are limited to customers who are family members of those who are part of the company subscriptions – traditionally the main market of TelCo.

#### *4.1. The worsening financial situation*

The strategy of growth in TelCo has not been translated into positive financial figures over the last several years. In 2009 and 2008, the figures in consolidated accounts were respectively -389 million NOK and -208 million NOK. In year 2010, the company budgeted an EBITDA<sup>3</sup> of 400 million NOK, but the profit after taxes was budgeted to a figure of -207 million NOK. After the first quarter of 2010, the EBITDA figure deviated negatively by 13 million NOK from what was budgeted and the adjusted annual financial forecast showed the negative budget deviation was 50 million NOK. As a result of a negative EBITDA over several years, the owners of the company and its creditors have all requested that TelCo has to show a positive cash flow in 2010. Because of this requirement, negative budget deviation reported in the first quarter of 2010 had an immediate impact on the annual investment budget approved by the board. The corporate managers were asked to review the investment budget earlier approved for 2010 and reduce it by 50 million NOK to secure the net cash flow planned for 2010.

#### *4.2. Management Control in TelCo: Combination of annual budgets and BSc*

TelCo uses traditional budgets together with the Balanced Scorecard (BSc). The purpose of the budgeting process in TelCo is to establish quantitative objectives and action plans for the coming year. The budget is seen as a foundation for management in the organization and follows it up by use of recurrent financial reporting and corresponding corrective actions. The main outline of budget used in TelCo is presented in Figure 2.

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<sup>3</sup> EBITDA – Earnings Before Interest, Tax, Depreciation and Amortization

**Table 2. Budget outline in TelCo (simplified)**

	Budget Account Deviation		
External revenue	X	X	X
Internal revenues	X	X	X
Variable cost of revenue	X	X	X
<b>Gross margin 1</b>	<b>X</b>	<b>X</b>	<b>X</b>
Fixed cost of revenue	X	X	X
<b>Gross margin 2</b>	<b>X</b>	<b>X</b>	<b>X</b>
Sales, General and Administration costs	X	X	X
<b>Earnings Before Interest, Tax, Depreciation and Amortization (EBITDA)</b>	<b>X</b>	<b>X</b>	<b>X</b>
Depreciation and amortization	X	X	X
<b>Earning Before Interest and Taxes (EBIT)</b>	<b>X</b>	<b>X</b>	<b>X</b>
Net financial costs	X	X	X
<b>Profit before taxes</b>	<b>X</b>	<b>X</b>	<b>X</b>

The planning and budgeting process in TelCo is a mix of top-down and bottom-up processes that usually starts in the beginning of September. The committee (consisting of corporate top managers) meets in the beginning to set up the financial targets and priorities for the company for the coming year. In this phase, only top managers of the company are involved in determining the main objectives for the coming year, including the most important parameter for the company – the EBITDA. The first round forms the first draft of the budget proposal, which represents the expectations of the organization for the coming year including sales volume, the level of production activity and investments. However, since this top-down approach may reduce the ownership of the budget at the line managers' level, the top-down approach was traditionally supplemented with a bottom-up approach where middle-managers were involved in setting up their local budgets based on the budget numbers provided from the top. The CFO expressed it like this:

*“It is important for TelCo that line managers have ownership and responsibility for meeting their budgets. At the same time, we have to avoid using unnecessarily much time to revise unrealistic budgets. The combination of a top-down budget followed by a bottom-up approach has therefore been a solution for us”.*

Usually, it takes a series of adjustment rounds until the budget is approved by the top management of TelCo and finally presented to the board at the end of the year.

Since 2005, in addition to the traditional budgeting process, TelCo has introduced the Balanced Scorecard (BSc). The strategic map for the Balanced Scorecard in TelCo is presented in Figure 1. The BSc framework measures and communicates a number of KPIs, which are related to the company's

visions and its three strategic areas of competition: efficient services, high-speed broadband and customer experience. The main idea for the introduction of the BSc was to move the focus away from the bottom line of the budget and its accounts towards the vision of the company and the way it should work to attain these visions in the everyday activities of the company. In the beginning of the use of the BSc a very large number of KPIs were introduced which by many was more confusing than creating of a holistic picture. However in the present system budgets work together with KPIs in the BSc, and action plans are the most important management control tools with respect to deciding the priorities of activities and the use of resources. The company has also practiced preparation of forecasts for 12 months ahead.

Another important aspect of the budget and the BSc is their relationship to the incentive system. Line managers have bonus arrangements, which are divided into two parts: one common bonus related to the realization of the EBITDA parameter in relation to the corporate budget and an individual bonus related to KPIs. Examples for such KPIs can for example be different requirements for the reduction of costs of salaries for the concrete unit of responsibility or to implement successful renegotiation of large supply agreements that reduce the costs for the company. Bonuses can be also related to the fact of simply the keeping cost frameworks instituted by the annual budgets.

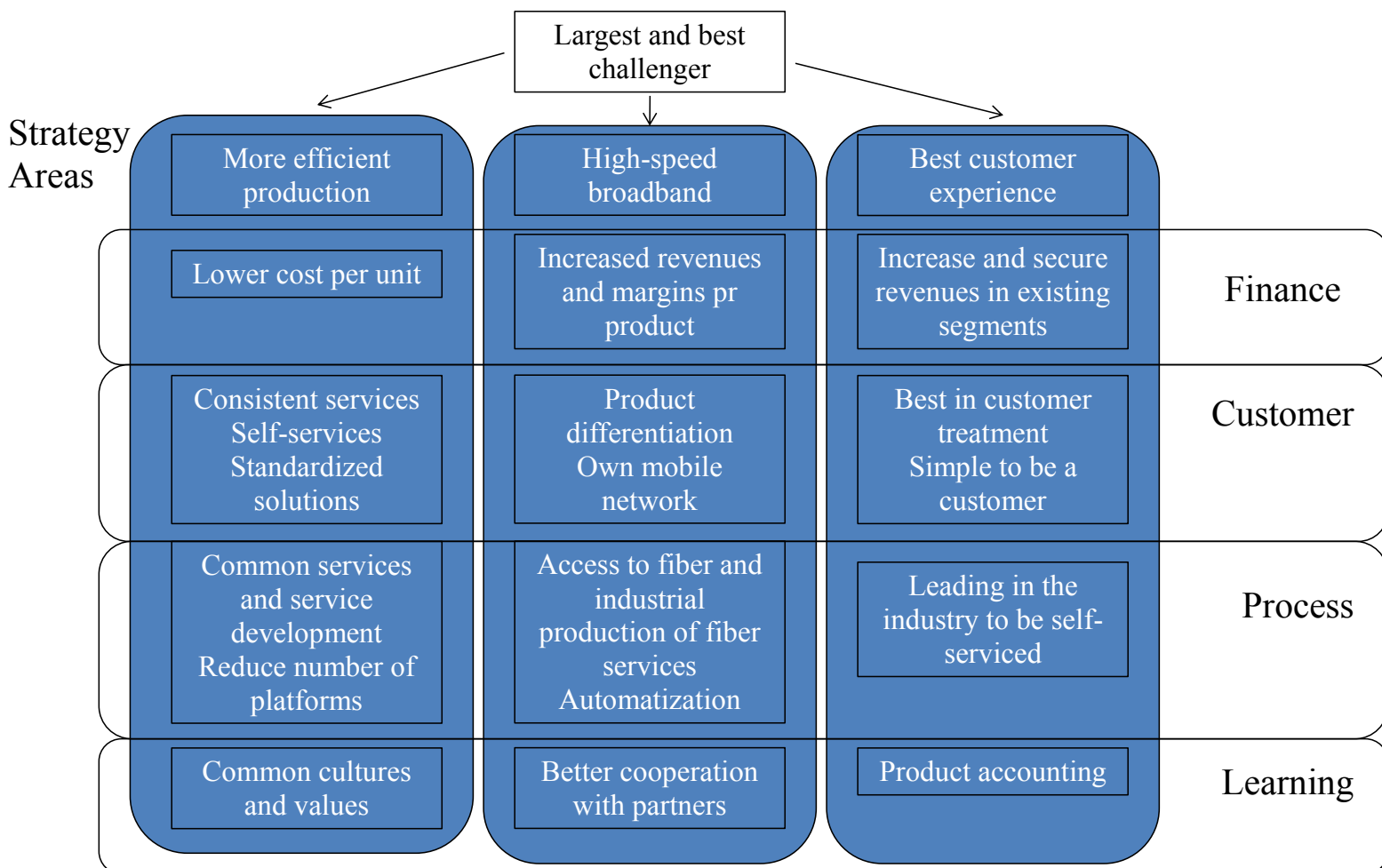


Figure 1. Strategic map at TelCo as a foundation for its Balanced Scorecard (simplified).

#### 4.3. Challenges for management control in TelCo

During the last few years, it was difficult for the top and middle level managers to come to an agreement during budget adjustments and discussions. Worsening financial situations and more demanding requirements from investors have influenced the budgeting process. The culmination came during the fall of 2009 when the budget preparation for the year 2010 took a much longer time in relation to the initial time frame set up by the board. Negotiations between the top and line managers to establish a realistic budget were very difficult. This resulted in several immense cost cuts elaborated by the top management in the final version of the budget for 2010 without consulting the middle managers. The understanding of what caused the crises was different



between the top managers and the line managers. Below, we provide stories told by line and top managers regarding the situation.

### Stories from line managers - lost balance between cost and value focus

#### *Story 1 – Customer and operation attention*

As a first story, we report our discussions with the director of the service delivery department in TelCo. The director had complained many times about the delivery time for the fiber connections. The director explained:

*“Our customers complain that it takes too much time to deliver. It is impossible to get new customers when our reputation tells them that it takes too much time for us to deliver compare to our competitors! I am pretty sure that delivery time has increased because of the large focus on cost cuts. I stumble between the tough requirements for the quality of services and the demands of cost cuts. The main operational KPIs for my department are related to “delivery time” and “delivery in accordance with specifications”.*

These two KPIs are on a collision course with financial indicators such as “cost of services delivered”, which is related to the budget. For the year 2010, the department has a financial goal of cutting the cost of services delivered by 8 million NOK. He exclaimed:

*“It is difficult to cut costs and at the same time maintain the high level of delivery”.*

The manager means that the focus on management by the use of budgets stimulates short-term orientation. He argues that it is an “evil circle”: budget cuts are results of poor previous long-term strategies. A budget does not provide an incentive to work more on improving long-term strategies, but instead facilitates the execution of short-term measures. For example resulted this budget attention on cutting out “expensive” agreements with sub-contractors but it also resulted in losing large parts of the sub-contracting network which was damaging from a longer perspective.

The budget has not given much ownership and empowerment to line managers; the bottom-up process no longer works in the company. The line managers argue that with poor financial performance, corporate managers have too much decision authority over the local matters without understanding the nuances of work in the different divisions. Thus, budget is exclusively used as a cost cutting device. This hinders corporate managers from giving authority to the line so that they

can act in order to reach the KPIs in the Balanced Scorecard, which translates TelCo's long-term strategy.

In sum the story shows how the line managers argue that the causes of the crisis are based on a decreased demand from customers and the consequences are reduced income. The top managers tries to cope with this by moving the focus from information based on the BSc to information based on the budget. This implies that it becomes an extreme cost focus instead of balancing it with what gives values to the company.

#### *Story 2 – decentralized of centralized decision making*

In the second story, the technical director in TelCo also experienced frustration. His job is to make an investment budget for TelCo and he has authority to initiate planned investments. However, lately he needs approval from corporate management for all investments over 250,000.00 NOK As an example, he indicates that the network between two big cities should be built in order to handle large and important customers in Northern-Norway. It will require a one time investment of a relatively small amount of NOK (300,000.00), and this amount was previously elaborated in the budget of the department for 2010. The timing of the investment is crucial because it can take up to 12 weeks for delivery of equipment from a subcontractor. However, under the new regime, a final approval is required by the top management before the construction can take place. If extra time is spent on waiting for the approval for this investment application, valuable time will be lost. The technical director explained the dilemma like this:

*"We use too much time in order to make investment applications that are good enough to get funds for activities we mean are right to do. We often get the application back with questions about whether it is possible to implement the investment with lower costs. This shows a lack of confidence from top managers in our local interpretation of the long-term strategy. I think we know best about what is most profitable in the long-term. Time spent on evaluation of applications is better spent on value creation in the company. There is too much focus on getting the lowest possible level of costs and not on having the right cost level".*

Therefore, the technical director does not understand why this detailed control really is needed. There is little dynamic in the way investments are done today, which he argues is dangerous. In his opinion, the line managers and employees at the departments know best where investments should be made to realize the indicated strategies. According to the technical director, the corporate

managers should spend more time on communication of the corporate strategy and empower the line managers with the authority to make the necessary decisions, rather than be in charge of budget cuts.

In sum, this story shows how the top management copes with the crisis by increasing the command-control structure. They centralize the decision making to increase control. As a consequence the bureaucracy increases and the frustration among line managers increases. However, it does also create an attention on investment decisions.

### Story 3 - attention of KPIs

As a third story, we provide a report from the interview with the director of sales. The director cannot make good sales agreements for the salespersons he is responsible for and he blames the current system for this. The business unit is measured by how many new sales they produce. But new sales are only part of the story as there are two types of salespersons. The “hunters” are those who are out in the market obtaining new customers, while the “KAMs” (key account managers) are those who work maintaining the largest and therefore the most important customers. Their performance is measured based on their maintenance of the customer portfolio. For KAMs, it is important to work with service quality and customers satisfaction in order to maintain customers. According to the company's strategy, both categories of salespersons are important, but using the budget to design the incentive system provides challenges. For instance, it is difficult to get reliable information to design good incentives for KAMs under the condition of budget domination. As for “hunters”, a budget-based bonus system introduces the “ceiling” in the bonus system, meaning that the best sales persons who could bring in more customers will not be motivated to extend their efforts as soon as their sales meet the budget. When elaborating sales budgets, individuals are very conservative. He expressed it in this way:

*“Wide use of sales bonuses related to sales budgets leads to a defensive budgeting of sales volumes”.*

In sum, this story shows how the top managers introduces budget related to sale budgets. They try to cope with the crisis by giving more attention to sale activities. However, this seem to be done with little understanding of how the sale department work, which result in a dysfunctional bonus system.

### Stories of corporate managers

The CEO presented the undated financial forecasts in March. He recognized that it would be necessary to reduce the annual EBITDA requirements after the first quarter in the budget with 50 million NOK compared to what was originally planned. He could not find any other solution than to reduce the investment budget accordingly in order to secure a positive cash flow at the end of the year. At the same time, the CEO introduced a tougher investment policy at TelCo. Owners of the corporation were preoccupied with the EBITDA and the corresponding cash flow. The short-term goal was by all means to secure a positive cash flow and the CEO defended this short-term goal with the following arguments:

*“If we don’t earn enough money, what would we have to manage afterward? The answer is the cash flow – if we don’t have cash flow, the bank stops. Before, the company could have compensated for higher costs with higher sales, but now the market is stabilized and we don’t have the growth situation we experienced before. Thus, we need to consolidate our efforts and see how things will develop”.*

Thus, the CEO is preoccupied with securing liquidity and the satisfaction of investors. It is clearly the solving of the short-term financial problem that is on his mind.

The annual budget and accounts play an important role as the formal communication devices between corporate management and the board. Investors in TelCo have not gained any money from their investments in the company during the period 2007 – 2010. Some investors argue publically that TelCo is still in the market establishment stage and therefore their investment in TelCo should be considered a long-term investment strategy. However, the owners have set goals for their investments in TelCo and need to defend development with respect to their investments in TelCo to their corporate boards. For this reason, budget and accounting information from TelCo is required by the owners. Although many hope that profit will come in the future, some of the investors have run out of patience since the value of their investment is decreasing over time. Some investors have even chosen to write off some of the investment in TelCo in their financial accounts due to the fact that the financial results were not as expected.

Annual budget and financial information is also important for the banks, which ask for 3-year financial plans. Each year, the financial plan is defended along with rolling financial forecasts for the next 3 years. Sometimes these financial plans will even be stretched to 10 years for the purpose of the long-term company capital valuation. Without showing positive liquidity, TelCo could have huge problems in refinancing their loans from the banks as banks have very strong covenants and

conditions related to loan agreements. There are also demanding requirements with respect to auditing company accounts each year in order to defend the capital valuation of the company.

Therefore, corporate managers identify the budget as an important link between investors and their work to influence the organization for which they have responsibility. The budget has an important role of translating ambitions and goals for financial plans, which will provide the foundation for the final investment budget on the local level. The most important thing is for the budget to focus on revision of strategy plans each time the budget is discussed. According to the top managers the most important function of the budget is to identify and cut costs that are not related to creating value. Furthermore top managers argues that the message of cost cutting, which is sent each time to the line managers, is good because it is a motivation for trying to do things differently and more efficiently. Since March 2010, TelCo's corporate management tightened controls and restricted the delegation of authority to the line managers. Top managers mean that line managers should fight for each decision, and they believe that this is functioning as the amount of investments required to meet their target went down.

This story has showed us that there is a long-term strategy at TelCo, and at the same time short-term measures are becoming more important. The message has been clear from the investors – there will be no more investments from owners: meaning that the company should manage investments on its own. This is the direct cause of the crisis for TelCo. Under these circumstances, it is important to construct a plan about how to get out of the difficult financial situation. Banks and owners want predictability and security, and the demanding financial plans and policies are important in demonstrating that.

However, top managers are not naïve in terms of relying only on the annual budget for managing the organization in conditions of a rapidly changing business environment. The CFO in TelCo for instance expressed:

*"In this industry we don't know how the world will look in the next quarter of the year!"*

It seems to be an intensified attention on information from both budgets and BSc. Budget, thus, is recognized as rigid and inflexible, therefore top managers have to use other tools to monitor what is going on in the business environment. Use of the annual budget is supplemented with continuous financial forecasts at the corporate level. According to the CFO, the budget is actually no longer actively used after the first quarter of the year because the annual budget is already "dead" as such

and thus abandoned as a management tool. Management on the corporate level is performed by the active use of forecasts, which are produced monthly on the aggregate level starting from March each year. These are forecasts related not only to financial indicators but also to salaries (incorporated as Sales, General and Administration costs (SG&A) in the budget). Based on these forecasts, corporate managers can establish new priorities in order to take advantage of newly emerging opportunities in the market and to use money for measures that should be given a priority.

Top managers argue that it is important to do realistic forecasts at the level of corporate management. However, not all the information that is available for the corporate managers from these forecasts goes to the board. Managers at the corporate level argue that information presented to the board should not be too optimistic, so that the board could be “blinded” for instance by good current sales figures. So, what is discussed internally by corporate managers and what is presented to the board and other external parties is carefully selected in order to make a “credible story” to the board of how the current financial situation is at the moment.

## **5. Discussion**

The aim of the paper is to provide an understanding of how conflicts in information attention emerged and in what sense these tensions can be attributed to the conflicts built into the design of the company’s MIS. Particularly, whether and how the use of information from the MIS based on combining budget-oriented and BSc-oriented systems is incompatible for line and top managers.

We have shown that in theory the design of budgets and the BSc does not necessarily need to be difficult. From the view of designers, the integration of the budget and the BSc is compatible (Otley, 2001). When it comes to design, the budget and the BSc are understood as two different tools in a control package (Malmi and Brown, 2008) or as two different tools that both can be used side-by-side in a beneficial information and dialog relationship (Simons, 2005). However practitioners argue that budgets and BSc can never act side-by-side as equals. Instead the focus from the top managers will decide what tool wins the attention game. Previous studies have shown that even if a company starts to measure a specific area, it will not become the focus if top management does not emphasize it and give it attention (Catusus et al, 2009). In other words, it is not “what get measured that gets done” but “what the top managers give attention that gets done”. If the budget is emphasized, the BSc will be less prioritized and the other way around.

Our case study shows how TelCo uses both traditional budgets and the BSc together and this creates tension. Line managers only use the budget as a planning tool in order to establish quantitative objectives and action plans for the coming year, while the top managers, via the board, use the budget as the main strategic and management control tool. The line managers try to place more attention on the BSc but have had difficulties in getting their arguments through, especially after the company started to have financial difficulties. This creates a dilemma for the dialog between the corporate level and the line management level.

#### *5.1. Problems with information use: different logics and knowledge bases of managers*

We have shown how conflicts arose between the line managers and the top managers along two areas: time horizon (short/long-term) and different focus on information (internal/external). The two first stories of line managers concern *the time horizon conflict* between budgets and the BSc. For the budgets, the time frame is short; while it for BSc, it is long (see Table 1). The time frame for the budget is one year and the idea is to establish the priorities in advance and follow these priorities the whole period. The BSc, on the other hand, has a long-term time frame that focuses on important KPIs related to customers and quality. The length of the time frame is not explicit, but the idea is to make cause-and-effect relationships between the financial dimension and other dimensions such as customers, employees and processes.

The conflict in our case is related to how the time horizon is understood because top and line managers operate with different logics steaming from their practices. The top managers act out of the board's financially oriented logic, where costs have first priority. While the line managers act out of the market logic, focusing on their main challenge in the market, for example maintaining short delivery times. Cost cuts and delivery time are conflicting measures and the main focus on the budget from the board forces the top managers to focus exclusively on cost cuts.

In the second story we also identify a conflict related to time horizon. The story describes the investment policy that has changed so the line managers need an extra authorization in order to make investments. As a consequence, it takes longer time to make an investment. In the story, the line manager argues from a market-based knowledge perspective and the need to be quick in making the investments, while the top managers (in line with the board) want to centralize the decisions in order to be cost efficient and have control.

An explanation as to why the conflicts arise is that different knowledge bases are used. The top managers (in line with the board) base their decisions on internal accounting information based on historical data, where they have identified a downward financial trend. Top managers' interpretation of the best solution is to cut costs and be more careful in decision-making situations. The line managers, on the other hand, also see a downward financial trend, but their interpretation is that the only possible solution is to adjust rapidly to market changes and follow the new strategy. The cause to the crisis is understood in the same way while the coping with the crisis is very different.

A consequence of these two interpretations of the situation, the top managers are reluctant to decentralize autonomy to the line managers because they will then use their knowledge about the market and make decisions from that specific knowledge. This means in the first story that delivery time would come in focus instead of just cost cuts and in the second story that the line manager would make the investment if he meant that it was strategically correct.

### *5.2. Information conflicts: "information de-coupling" and "information suppression"*

The stories from top managers show how they try to find a balance between the concerns for strategy and the requirements from the board and the owners. Instead of providing the board with all the information, the top managers act selectively and only provide enough information for "a credible story". Internally, however, even though they have to allow the line managers to act out of the market information in order to follow the strategy, the cost focus has to be emphasized much more. In other words, the information becomes divided into two different stories. One story is internal, focusing on cost cuttings and actions to survive, and one for external actors (boards and stakeholders), focusing on a credible story about how successfully they are heading out of the crises by implementing cost control measures.

In this sense, top managers have a possibility to de-couple the use of information in the MIS depending on the receiver and act selectively in communicating information depending on the story that should be told. The top managers' knowledge base is related to their experience of acting as a link between the board and line managers. Having control over the MIS, top managers don't seem to have problems with having both budgets and the BSc, since each one gives a better space for maneuvering. When they sense that the present information tools do not provide the information needed, they can easily institute and mobilize other tools as deemed necessary (e.g. introducing forecasts when budgets were becoming problematic) or switch between the tools.



Contrary to that, line managers cannot de-couple the use of information when there is an information conflict. In our case, the use of both budgets and the BSc put line managers in a difficult situation where the effects of using both were difficult to reconcile. Information coming from budgets motivates actions that contradict the market logic of line managers and that are supported by use of the strategy-oriented BSc system. But, line managers cannot sabotage the attention of the budget in favor of the BSc because the budget is linked to their performance evaluation. In this sense, use of BSc as a management tool for line managers is “suppressed” by the attention to the budget, limiting line managers’ ability to balance the use of other types of information, thus having a controlling rather than enabling effect on line managers (see e.g. Mundy, 2010). Therefore, “suppression” of the BSc by attention to the budget can be seen as a rational behavior of top managers to satisfy the board of directors, external shareholders and investors.

## **6. Conclusion**

The aim of this paper is to provide an understanding of tensions in the use of information for operational decision-making and control that were experienced by line managers in a telecom company under financial distress. We have shown that the use of MIS combining both budget-oriented and BSc-oriented systems produce information conflicts for managers. In explaining these findings, 4 C framing offers a useful vocabulary to illuminate these processes of how strategy is exercised by the use of two accounting tools – both budget and BSc – and the conflicts that can arise when this is done. These conflicts are based on usage of information anchored in different knowledge bases of top and line managers. The line managers’ knowledge base is a routinized type of behavior based on their experience of acting in the market. This experience is constituted and kept together by several elements such as their practical understanding, which creates his or her ability to identify, perform and respond to the events within a practice, but also on a more general understanding based on the context in which they act. The top managers' knowledge base is in a more political arena, where they have to handle both the investors’ demands (on the board meetings) and the top-down administration of the company. Conflicts and tensions in information attention and use were more difficult to reconcile for line managers than for top managers because top managers have more freedom in instituting the MIS needed for their purposes, can more freely de-couple information use towards external and internal members of organization and can use the budget to “suppress” of alternative information tools like the BSc.

TelCo, which is discussed in this chapter, was torn apart between two translations of lack of profitability and a corresponding focus on the need for cash flows, on the one hand, and flexibility,

market adjustments and maintenance of the current quality of production, on the other. Confusion and tension can be a good way to create dynamic interactions between top and line managers and discussion about how to find ways out of economic crises. However, the story told in the case of TelCo demonstrates that confusion and tension in respect to usage of different MIS can also be counterproductive in the case of financial crises, when budget and cost cutting suppresses the use of the BSc and realization of strategy. It remains to be seen how top and line managers in TelCo will handle their financial situation and how the information problems of line managers will be resolved.

By using the 4C framework by Shrivastava (1993), our study has managed to shed light on the dilemma that comes out of how attention is given to different management control tools – BSc and budgets. As mentioned in the theory part crisis creates increased attention on information. This study help us to understand that this increased information attention by top managers also can result in conflicting understanding of the situation by different groups. We also showed in the theory part that D’aveni and MacMillan argued that failing firms react to a crisis in the output environment by engaging in maladaptive behaviours that are predicted by the decline, crisis-denial, and threat-rigidity response models. Managers of successful firms, in contrast, engage in different behaviors after the crisis strikes. These different behaviors enable the survivors to adapt appropriate, and they are predicted by scanning and stress theories. Our study shows a surviving firm that the top managers take the crisis seriously and act out of that. Still there are serious challenges in order to survive based on where different actors put their attention. Our study has contributed to understand how surviving firms struggle to find a way out of the crisis.

The top management version argued that there would be a trend shift in the company's financial situation by using a command-control regime and clear cost cuts on specific areas. The logic behind this argument is based on the story top managers had to tell the board in order to show action orientation and control in a difficult situation. In contrast, the line managers’ version of management control stressed increased market orientation and close relationships to the customers. Instead of placing the focus on the information as such, the focus was on the activities.

These versions of management control expressed different concerns for the control “spaces”. The top managers’ version attempted to control production at a distance so that each space was fitted into an information representation that could fit into the credible story they had to tell the board and the investors (which in this situation is understood as the main actors). To do this, they needed information from both the budget and from the BSc. They had to signal a short time horizon and an internal focus. This was a challenge to the line managers’ version, which emphasized the differences

between “spaces” regarding people, production and politics. There was, in contrast, a more focused attention to the local conditions that made sales difficult. This demanded a longer time horizon, where resources were needed to create an increased degree of competitiveness. The focus could not only be on internal issues, but also had to take external issues into account.

Our findings show the benefits in using the 4 C framework and attention giving in order to better understand dilemmas and conflict that can arise out of design of management control systems. The trend of management control systems is to increase the number of tools in order to get more and better information for the different actors in the organization. However, as our study shows, this can also have many challenging aspects. Therefore, new information should not be implemented unquestioned, even if the information as such can be valuable; it has to be related to whom should use the information and how can it work together with the existing information.

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## **Appendix A. General Interview guide**

**This is a description of the main topics for discussion in semi-structured interviews.**

### **Theme 1 – Introduction about the context and respondents**

Presentation of interviewers and the aim of the project, including issues of research ethics

Presentation of respondents, their background, responsibilities and daily tasks

### **Theme 2 – Use of information**

Description of information used to handle main managerial tasks, especially in relation to:

- Strategy work/planning
- Budget work
- Performance management system and incentives

### **Theme 3 – Use of management control systems: challenges and solutions**

Perceived problems in how management control is functioning in TelCo

Perceived reasons for these problems

What are the ways these problems are handled/possible solutions

## Appendix B. Overview of respondents in TelCo

**Table B.1. Overview of respondents and their positions in TelCo.**

TelCo	
Respondent 1	CEO of TelCo
Respondent 2	CFO of TelCo
Respondent 3	Director, technical department, investments in infrastructure (cables and networks)
Respondent 4	Director, unit responsible for sales to business market
Respondent 5	Director, unit responsible for deliveries of telecom services/solutions





Open your mind. LUT.  
Lappeenranta University of Technology

## The Role and importance of international accreditation of business schools and programmes: some thoughts and critical reflections

**Sami Saarenketo**, Vice Dean of the School of Business,  
Lappeenranta University of Technology

Workshop Oppdal 9-11 October 2013

### AGENDA

1. What are the accreditations?
  - AACSB, EQUIS, AMBA, EPAS
2. Why do they matter?
  - *The Benefits for the stakeholders (and costs)*
3. How to pursue an accreditation?
  - *Some personal thoughts, experiences and reflections based on our EPAS journey so far*



There are about 13670 BS in the world and this number is likely to rise –less than 10 % hold accreditation.

What are the accreditations?



AACSB



AACSB (The Association to Advance Collegiate Schools of Business) is a US based in 1916 established accreditation organisation. AACSB evaluates a business school's mission, faculty qualifications and contributions, programmes, and other critical areas on a five year review cycle. Particular important for AACSB are the assurance of learning standards. Student learning being the central activity of higher education, schools should have learning goals in place that encourage continuous improvement in educational programmes.

AMBA



The Association of MBAs (AMBA) is a London-based in 1967 established international organisation that accredits postgraduate business programs at business schools worldwide. The Association is one of the three main global accreditation bodies in business education. It differs from AACSB and EQUIS as it accredits a school's portfolio of postgraduate business programs rather than the entire business school.

EQUIS

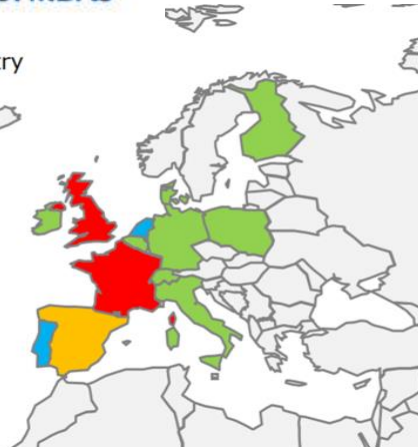


EQUIS (European Quality Improvement System) was created in 1998 as part of the European Foundation for Management Development EFMD, a Brussels-based organization that seeks to improve education and research in the field of business and management. The EQUIS accreditation is awarded to business schools based on general quality. The process also takes into account the business school's level of internationalization, which is not a strict requirement for accreditation by the other two major international accreditation bodies.

## European Countries with Triple-Accredited Schools



-  4 and more schools per country
-  3 schools per country
-  2 schools per country
-  1 school per country



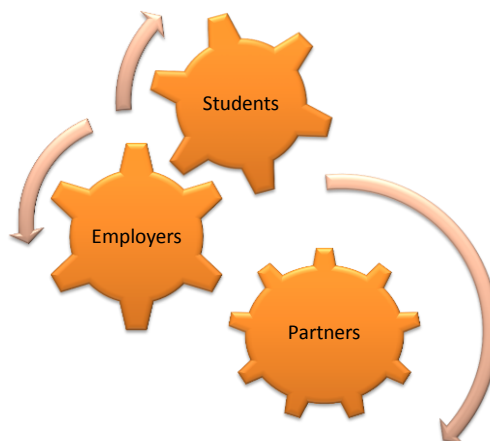
Why, how and whom do they matter?

## Benefits of Accreditation (EFMD)



- International recognition of excellence: international development
- Legitimacy to internal and external stakeholders that you have a strong international reputation (donors, alumni, government) and that your school meets the high standards of the best business schools in the world
- Mechanism for international benchmarking with the best
- Sharing of good practice and mutual learning
- Agenda for quality improvement and future development
- Become part of a network of top schools to develop relationships with fellow accredited schools for research, exchanging best practices on programmes, etc.
- International Legitimacy vis-a-vis - recruiting international students; creating double degree partnerships; forming international exchange relationships; recruiting new faculty

## Why bother? The stakeholders



For the **students** it is a guarantee that:



- Their degree will be recognized wherever they want to work in the world
- Their business education meets the highest standards, measured against the world's best schools
- Their teachers meet the professional standards set by the accrediting bodies
- The services the school offers to support them academically and in extra-curricular activities are world-class.

Source: QUT

The **employers** can be sure that:



- The graduates have the skills necessary to meet their needs
- The content of the degrees accords with the expectations of employers globally
- The programs are underpinned by high quality research and an international perspective.

Source: QUT

The **partners** of the school will know that:



- The quality and scope of research is at an international level, with an orientation towards applied practice
- The school is committed to offering joint academic programs for students, including student exchange
- The school has a growing range of linkages in the corporate world and with professional bodies
- International cooperation and relevance are key aims in all that the school does.

Source: QUT

What are the costs of Accreditation?



- Deadweight costs: Bureaucracy to gather data, complete forms, costs of accreditation visits
- Strategic costs: May require change of mission or unwanted change to strategy
  - AACSB's focus on university: may prevent b-schools in universities with other management programmes from applying
  - AMBA's rule that MBA entrants require three years' work experience: Harvard Business School, Wharton, Stanford GBS all do not meet this requirement
  - EQUIS's rule that b-school's must be autonomous: works against b-schools which are fully integrated into universities (most b-schools in Finland are, for example)

Source: NTU



# How to pursue an accreditation? - Insights from our EPAS Experience

## Dean's view on EPAS



*"In conditions of intense international competition EPAS is indicative of the high quality of the degree and the institution. In the face of so much choice among universities, accreditation has become a yardstick with which to judge the quality of service. Most high-quality universities will only partner with universities with a recognized status. Such a status therefore adds to the value of the degree of our graduates and is advantageous in terms of their career and salary development."*



## FINLAND & LAPPEENRANTA



## LUT FACTS & FIGURES



- Founded in 1969, combining technology and business from the start
- Over 10.000 have obtained a Master's degree in technology or business, and nearly 500 have obtained a doctorate in technology, business or philosophy
- Approximately 1000 staff members
- 5 700 undergraduate students: technology 76%, business administration 24%
- 23% of technology students and 50% of business students are women
- 386 degree students (7.4%) are foreign nationals, 14% of first-year students foreign nationals
- 47 different nationalities at LUT
- Life-long learning: 1 697 students in continuing professional education, 1 490 students in open university education



## THE MISSION OF LUT SCHOOL OF BUSINESS

- to offer focused programmes and contribute to new knowledge on sustainable competitive advantage among firms in global markets for the benefit of the international academic community, the students, and society in general.
- As part of a university of technology it emphasises the interface between business and technology, and has specific expertise on Russian markets. Its efficiency is rooted in a results-oriented and collaborative culture.

## About the MIMM programme



- The MIMM programme is a two-year full-time pre-experience Master's degree corresponding to 120 ECTS. It is built at the intersection of three pillars: Marketing, International Business, and Technology Management (including Innovation).
- All MIMM courses are worth 6 ECTS and represent 160 student learning hours. In-class hours vary between 20 and 50, with compulsory courses during the first year of the programme comprising 35-40 in-class hours.
- Three courses (18 ECTS) have to be taken in each pillar; they are complemented by (at least) one language course, one course on Methodology, four courses in a Minor subject (recommended minor is Russia) and a Master's thesis worth 30 credits.



## Our EPAS journey



Stage of the process	Timing
Inquiry*	June 2010
Application submission	Early August 2010
Eligibility	EPAS Committee meeting, 14 Sep, 2010
SAR submission	June, 2011
PRV	27-28 September 2011
Accreditation	EPAS Board meeting, 22 February 2012

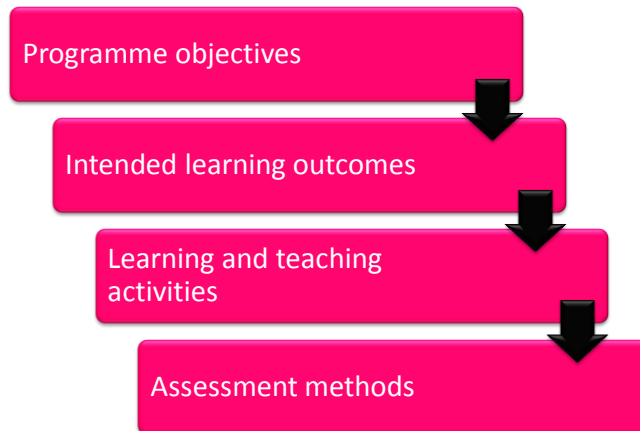
*\*Meet up with Ulrich Hommel during EFMD Annual Conference in Wiesbaden to discuss the potential application (on the basis of a draft data sheet)*

## From eligibility to SAR



- Gameplan: Do not rush into SAR writing before you are ready!
- Strategy-level: What needs to be done before starting the documentation?
  - E.g. more explicit faculty-level strategic targets
- Programme-level: What needs to be done before starting the documentation?
  - E.g. core programme team composition
  - The programme contents must be polished

## Key development process on programme level for SAR: Constructive alignment

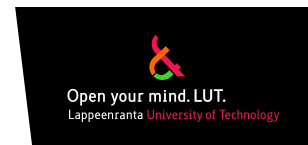


## MIMM Programme Objectives



- To turn out Master's-level practitioners in the field of international marketing management capable of securing competitive positions in dynamic global markets. Compliance with the high standards set for international Master's programmes ensures the competitiveness of MIMM graduates, measured in terms of **time to employment** and **starting salary**.
- To educate professionals capable of applying academic theories and tools in resolving business problems. Special emphasis is laid on combining academic rigor with practical application.

## MIMM programme structure



International Marketing Management MIMM			
	YEAR 1 AUTUMN GENERAL MAJOR STUDIES	YEAR 1 SPRING ELECTIVE MAJOR STUDIES	YEAR 2 AUTUMN SPECIALIZATION STUDIES
MARKETING	Strategic global marketing management	Special issues in marketing management	International marketing of high technology products and innovations
INTERNATIONAL BUSINESS	Internationalization of the firm	Functional IB strategies	International entrepreneurship
TECHNOLOGY MANAGEMENT	Technology and innovation management	Consulting project	International business strategies
Languages 6 ECTS   Minor subjects 24-25 ECTS   International exchange			Methodology studies 5-6 ECTS
			YEAR 2 SPRING MASTERS THESIS

### Strong focus on:

- Intended learning outcomes (ILO)
- Company relevance and cooperation
- International competence of graduates



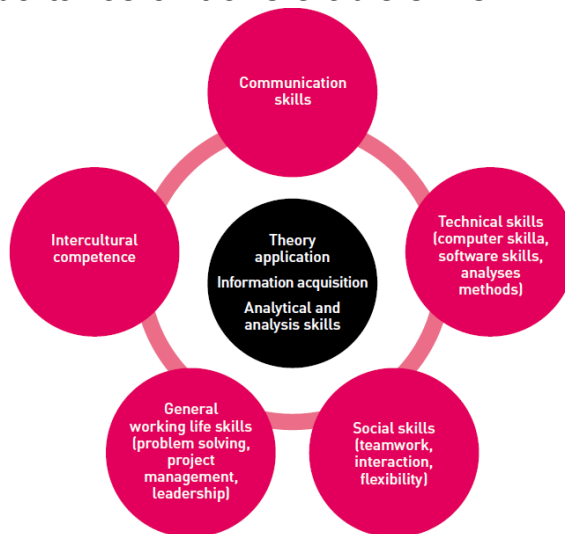
## Intended learning outcomes: *What are the knowledge, skills and attitudes that our students acquire?*



After completing the programme, students will be able to:

1. Understand and assess the challenges of turbulent business environments
2. Evaluate and design strategies in such environments in marketing, international business and/or technology management and at their intersection
3. Apply relevant business skills
4. Acquire relevant additional knowledge and skills to support subject-based expertise and international readiness
5. Conduct an independent scientific research project and report it
6. Utilize strong analytical skills and apply the tools required in professional practice
7. Demonstrate a global, innovative, market-oriented and ethical mind-set

## Closing the knowing-doing gap: Importance of ‘transferable skills’



## Skills development in MIMM courses



	SGMM	CRM	CIIM	IOFGM	MF	CIA	OT	TIM	CP	IHTM	IE	IBS
Theory application	x	x	x	x	x	x	x	x	x	x	x	x
Information acquisition	x	x		x		x	x	x	x	x	x	x
Analytical skills	x	x		x	x	x	x	x	x	x	x	x
Technical competence (computer skills, analytical methods, software skills)		x			x					x		x
Communication	x	x	x	x		x	x		x	x	x	x
Social competence (teamwork, interaction, flexibility)	x	x	x	x	x	x	x	x	x	x	x	x
General working-life skills (creative thinking, problem solving, project management, leadership)	x	x			x			x	x	x	x	x
Intercultural competence	x	x	x	x	x	x	x		x	x	x	x

## Learning and teaching activities



	SGMM	CRM	CIIM	IOFGM	MF	CIA	OT	TIM	CP	IHTM	IE	IBS
<b>Teaching activities</b>												
Interactive lectures	x	x	x	x	x	x	x	x	x	x	x	x
Visiting lecturers (academic)		x	x			x	x					
Visiting lecturers from business		x								x	x	x
Group tutorials											x	x
<b>Learning activities</b>												
Term paper based on literature or reflection			x		x	x	x					
Term paper including analysis based on available public information on products / firms	x			x				x		x	x	
Term paper including a field project based on empirical company data		x		x					x			
Term paper including a practical part (e.g., marketing plan, internationalisation plan)	x										x	
Computer simulation game												x
Case studies	x	x		x		x		x				
Role playing	x							x				
Elevator pitch											x	
Student presentations in seminars	x			x		x			x	x	x	x
Peer review	x			x							x	x
Self reflection / reaction	x	x		x			x	x		x		x

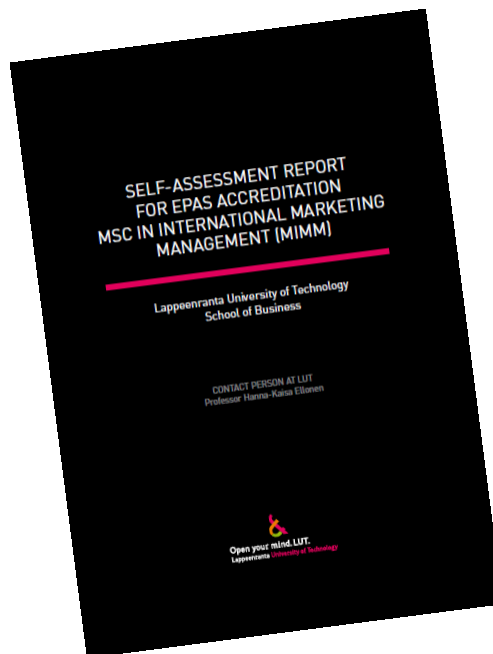
## Grading scale - key purpose is to monitor student attainment of learning outcomes



Description	Points / % of points	Grade
Work of high to exceptionally high quality showing excellent knowledge of the subject matter, well formulated arguments based on strong evidence, a high level of originality and critical thinking. Excellent communication skills. Fully realises the ILOs and develops them beyond normal expectations.	90-100	5
Work showing a good grasp of the subject matter, clearly developed arguments, evidence of critical thinking and good communication skills. Surpasses the ILOs.	80-89	4
Work showing an adequate understanding of the subject matter. There is evidence, although limited, of argumentation and critical thinking. Adequate communication skills. Clear evidence that the ILOs have been achieved and, to some extent, surpassed.	70-79	3
Work showing a basic understanding of the subject matter with some inadequacies. Limited evidence of argumentation and critical thinking. Adequate communication skills. Clear evidence that learning outcomes have been achieved.	60-69	2
Work lacking both breadth and depth. Evidence that the required learning outcomes are being achieved.	50-59	1
Unsatisfactory. Does not achieve the required learning outcomes.	0-49	Fail



SAR



## SAR: some key lessons



- Motivate and commit people early into the project! Good way to do this is to send many people to EFMD seminars and events. (this is not a paid ad 😊)
- It is not a one man band! Form a team and build a project plan, agree on tasks (e.g. who will write which sections). However, you need an overall editor to make it coherent.
- Follow the standards & criteria: Build a well-organized and coherent report!
- Back things up with facts, charts, tables whenever possible. You need to organize the data collection. You may need to produce data that your former systems and administrators are not ready to produce.

## SAR: some key lessons



- It is about evaluation of the current status of your programme, not about how great future plans you have.
- Remember the "critical self-evaluation" part. It is not about sales pitching.
- Do not hide your weaknesses, they will be discovered. Rather mention them and state that you have a solid plan to tackle them.
- "Put some color and life in your report".



## Our "Practical EPAS strategy"



- Our starting point: good programme and fit with EPAS criteria BUT school having low international educational visibility and reputation (*liabilities of smallness, newness and foreignness*).
  - strategy: Overdeliver with documents!



## From SAR to PRV



## PRV: some key lessons



- Arrange a "mock peer review" to practice your faculty, staff and stakeholders for a smooth PRV.
  - Make people actually read SAR
- Internal communication: What are our main messages?



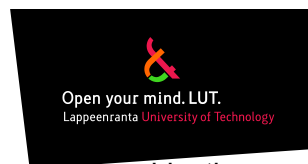
## PRV: some key lessons

- Organize the visit as professionally as you can:
  - How to make the baseroom comfortable for the PRV team?
  - Materials
  - Catering
- Managing expectations and aligning with the prior phases of the process. The base room should be built as a logical extension, your "SAR as a live experience".



## Some key conclusions

- Achieving international accreditation has become an objective for many European b-schools
- There are many benefits from accreditation, which come at a cost
- Have a strategy and gameplan for your accreditation effort:
  - What needs to be done before eligibility, before SAR, before PRV?
  - Read instructions carefully and "choose your battles" on what to improve
  - Build on your strengths and manage your weaknesses!
- It is about changing the culture. This may take more time than finetuning processes and practices.
- It is about committing your faculty, staff and stakeholders



## Benefits of EPAS



### 1. Process Improvement

- Going through EPAS encourages schools to re-evaluate and reform their programmes on the basis the EPAS Standards
- School realizes learning curve effects for an ongoing EQUIS accreditation project (EPAS as a catalyst for change)

### 2. Brand Value Enhancement

- EPAS accreditation certifies the achievement of a high level of programme excellence
- Creates cross-border recognition for the programme & the school

### 3. Networking Benefits

- Use the EPAS platform to link up with the other EPAS institutions (learning and partnering)

### 4. Service Benefits

- Benefit from ongoing support from EFMD Quality Services

Source: EFMD

Still one more thing...



Thank you for your attention!



[www.lut.fi](http://www.lut.fi)

[sami.saarenketo@lut.fi](mailto:sami.saarenketo@lut.fi)

Popular uploads

A video player interface showing a video titled "Open your eyes - Master's studies - LUT". The video frame shows a woman with blonde hair looking down, holding a pink umbrella with a white polka-dot pattern. The video player includes a progress bar at 0:00 / 1:17, a volume icon, and a settings icon.

Open your eyes - Master's studies - LUT

# Calculating outsourcing and a trial of strength

Mark Christensen

Peter Skærbæk

Kjell Tryggestad

## Literature

- Some within accounting (Cäker & Nyland) to be reviewed
- Mahama and Chua, outsourcing of warehousing to a telecommunications company. (the constitutive role of accounting explored)
- Huge non-accounting body of literature
- Constitutive role of accounting (Miller, LSE)
- Calculations as mediators (Latour, Christensen and Skærbæk)

# Research question

What is the role(s) of accounting in the major battles of calculating saving potentials of facility management outsourcing.

How the two emerging strategic alternatives became valued up against each other

How we can explain the final decision to do outsourcing as a Big Bang strategy.

## Actor-Network Theory and a trial of strength

- Some accounting literature focusing on "Trials" (Revellino and Mouritsen, 2009; Briers and Chua, 2001).
- Though not used in its advanced notion "of strength"
- Callon and Latour (1981, p. 292): "Strength thus resides in the power to break off and to bind together. More generally, strength is *intervention*, *interruption*, *interpretation* and *interest*."
- "The scene is set for a series of trials of strength whose outcome will determine the solidity of our researchers problematization" (Callon, 1986, p. 207).
- "To describe enrolment is thus to describe the group of multilateral negotiations, trails of strength and tricks that accompany the intersements and enable them to succeed. " (Callon, 1986, p. 211)
- "When imposing such a trial of strength they are faced with spokespersons and what (or whom) these persons speak for." (Latour, 1987, p. 78)
- "It (a separation) cannot be obtained without a trial of strength, any more than a boxer can claim to be world champion without convincingly defeating the previous world champion. (Latour, 1987, p. 78)
- Depending on the trials of strength, spokespersons are turned into **subjective** individuals or into **objective** representatives (Latour, 1987, p. 78)



## ANT (cont.)

- Framing and the establishing of boundaries
- Inclusion/ exclusion , what can be done and not done.
- That strategies and their (strategic) objects can overflow as mediators (not intermediaries).

## Pre-history

- 1972 Denmark becomes member of EU
- ?? EU Commission recommends outsourcing in the public sectors of membership countries.
- EU court: That EU cannot command outsourcing
- 1991 MoF launches its White Paper on outsourcing
- 1992 MoF launches a guideline on outsourcing
- Council for outsourcing established by MoF
- 1994 First Danish Law on outsourcing
- 1996: MoF informing the parliament that little outsourcing has taken place
- From 1996 Agencies have to report outsourcing degrees to MoF
- 1999: Consultancy company hired by MoF to evaluate outsourcing degrees in the state.
- 2000: Outsourcing council publishes report
- 2000: Danish Defence in Vision 2010 mentions outsourcing
- 2000: New law on a contest right for private companies

## **Case: Outsourcing in the Danish Defence Forces and its Facility Management**

- Cleaning, launmoving, window polishing, cantine services, lighter maintainence and repairs.
- Period 2000 -2013 Longitudinal study
- Primarily archival. Several hundreds of pages
- Interviews currently 16 including telephone conversation, but not informal conversations.

## **Bifurcation of outsourcing strategies**

- Potentially many ways of outsourcing
- Defence forces with many different barracks and establishments.
- At least 5 different types of service (expanding) provisions
- Barack by barack, service by service?
- Multiple packages
- Integrated and/or regional?
- Big Bang (few regions and integrated)
- Mega Big Bang (one region and integrated)
- **How to arrive at solutions (as strategies)??**

## The containment strategy

- 2001 – 2008
- Internal optimization first then gradual step by step tendering with control bids and then possibly outsourcing.
- Full-blown internal optimization with unions' participation
- 5 minor attempts of outsourcing in the 2002-2006 with little results and outcome.
- Rationale: Military officers' attempts of containing the outsourcing due to military preparedness considerations (resistance), cold war thinking!
- Gradually the strategy overflowed.

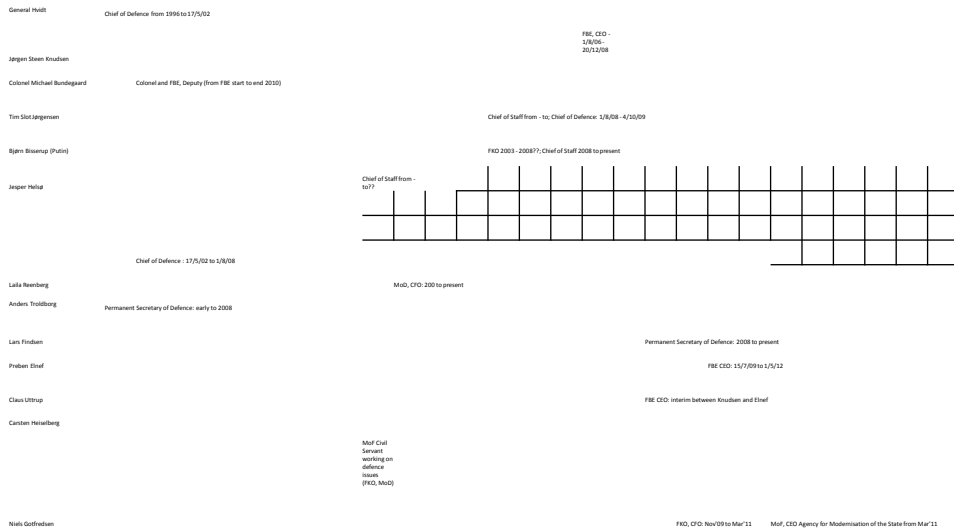
## Actions to enable BB

- New law on transfer of staff to private companies
- 2004 MoD conclude that internal optimization will end by 2006, then outsourcing
- Parliament decides to expand outsourcing
- 2004: MoF notes that MoD has handed in a plan for efficiency strategies.
- 2005: McKinsey and parliament that more outsourcing is needed.
- 2005: MoF notes that MoD does not calculate outsourcing degrees.
- 2005 MoF quotes OECD that recommends outsourcing (15 %)
- 2005 MoD, minister have meetings with FM industry.
- 2006: DCD Quality Division,
- 2007: FBE established
- 2007: Control document (MoD) that outsourcing degree must be 20 %
- 2007: MoD faced with the fact that outsourcing degree is only 17 %
- Early 2009: McKinsey calculates **30 %** savings due to outsourcing!

**24/6 2009: Parliament decision to Big Bang outsourcing.**

# Big Bang outsourcing

- 2006 till final decision by parliament 2009
- Big Bang from 2009-2017
- 2011 Bids for East contract integrated
- 2013 Bids for West contract integrated
- FBE out of the game as service providers and possible benchmark.
- Final tenders show 25 % savings close to McKinsey' 30 %.
- Mega Big Bang prepared from 2017. (Only one contract and more services to be included!)



## Explaining the Big Bang outcome

- The containment strategy overflowed
- Massive built up of paper "guns"
- Experts, McKinsey, OECD.
- Calculations
- Moving persons
- Appointing persons
- Dismissing and retiring persons (as consequences)
- Huge test of strength just in the period up to decision.

## Contribution

- To show how two strategic alternatives became evaluated in a major trial of strength
- That choosing involves a kind of massive battle with winners and losers
- How accounting devices create boundaries (inclusion/exclusion) in an unending stream of mediators.
- That the strategic centre of outsourcing shifted gradually to become confirmed with the parliament decision.
- That the strategic centre becomes the kind of objective representatives of the BB-solution.
- Showing how accounting calculations became decisive/convincing to decision-makers.

# **The displacement of the accounting technology in accrual accounting (anti)modernization**

**Workshop (arranged by HiST, Trondheim Business School)**

Oppdal

9<sup>th</sup> – 11<sup>th</sup> October 2013

BY

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**Work in process—1. Draft. Please do not quote**

# The displacement of the accounting technology in accrual accounting (anti)modernization

## Abstract

Actor network theory (ANT) is applied in this study to unravel the controversies in the debate over accrual accounting at central government level in Norway, including the ways in which the accounting technology was given the properties of an actor, and how this became a very controversial issue. The debate had two main camps, one led by those constructing and experimenting with the accounting technology, namely the Ministry of finance and its associates. The other camp was led by the Norwegian Confederation of Trade Unions (NCTU) and its associates. With the passage of time, the debate became deadlocked, action was overtaken, whereby the focus shifted from a discussion about accounting toward the networks and individual actors composing the debate. Rather than approaching each other and reaching a consensus, the discussants slipped further and further apart, grasping polar positions. One side—led by the Ministry of Finance, purified the technicalities of the newly developed (and tailor-made) accrual accounting model. The other side—led by the NCTU, purified the cultural aspect of the accrual accounting change endeavor. The NCTU achieved this by leaning on the experience of others—arguing that accrual accounting technology invokes a democratic problem, depriving the public sector of its resources. This represents an overflow effect whereby the alleged properties of other (and different) accrual accounting models became much more important than what could be deduced from the accounting model in question—effectively inverting the accrual accounting implications. This paper contributes by depicting the variety of actors (and devices) that might be mobilized in accounting debates. More specifically, the paper adds to the literature on accrual accounting in the public sector by unpacking how purification can bring the accrual accounting debate and policy making into an impasse. In this position, action and results are overtaken by politics, driven by overflowing effects and inverted accounting model implications. As such, ignorance of the hybrid properties of the accrual accounting technology disrupts the role of accounting in accounting change endeavors, thereby obscuring (the debate over) accounting in practice.

**Key words:** *Accrual accounting, central government level, Norway, Actor network theory.*

## 1 Introduction

Accrual accounting has been implemented in several countries (Blondal, 2003). This has gradually attracted a greater interest and debate with respect to what it means to implement accrual accounting. For instance, studies can be found on reasons for accrual accounting adoption (Carpenter, 1991; Carpenter & Feroz, 2001; Monsen & Näsi, 1998; Ryan, 1998) and the implementation (process) of accrual accounting (like, Arnaboldi & Lapsley, 2009; Connolly & Hyndman, 2006). Others have studied assumed effects of accruals in the public sector—herein in terms of unintended consequences (Ballantine, Forker & Greenwood, 2007; Ellwood & Newberry, 2007; Newberry & Pallot, 2005; Olson, Humphrey & Guthrie, 2001; Vinnari & Näsi, 2008), if users want such information and find it to be useful (Brorström, 1982; Pauli, 1999; Paulsson, 2006) or otherwise whether it is worthwhile the effort (Carlin, 2006; Guthrie, 1998; Robinson, 1998; Ter Bogt, 2008). Conceptual discussions are also present, emphasizing differences between public and private sector. The differences are said to make it difficult to apply the same accounting model in both the private and the public sector (e.g. Barton, 2002; Falkman, 1997; Monsen, 2002), thereby (arguably) making accrual accounting unsuited in the public sector.

The aforementioned displays the richness in the debate over accrual accounting in the international academic literature. The variety of viewpoints and research angles also suggest that accrual accounting is a controversial and complex issue. Moreover, given the many concerns, different stakeholders are conspicuously involved, favoring and opposing such accrual initiatives. Still, less is known about whether and how various accrual accounting related controversies (as mentioned above) impact on local debates on accrual accounting. There is however a set of contributions relying on neo-institutional theory, arguing that



accrual accounting is implemented in different countries because of legitimacy concerns, herein due to isomorphic pressures. Examples include Carpenter & Feroz (2001); Guthrie (1998). Nonetheless, it is not clear how such structural forces manifest locally. Particularly, there is a paucity of research examining in greater detail how international viewpoints and experiences impact on local initiatives and debates concerning the decision to adopt or avoid accrual accounting (in individual countries). As a result there are several unknown features of the accrual development in various countries. For instance, who are involved in the local debates? What controversies are especially pertinent? What mechanisms are relied on to front various viewpoints as different spectators are seeking to win the debate?

Learning more about local debates also illuminate what features—local or global—are being discussed and end up influencing the local decision in terms of whether and potentially how to approach accrual accounting. In such debates, as different parties seek to win the argumentation and potentially influence local policy making, it is plausible that issues beyond those primarily pertinent to accrual accounting might become influential. However, little is known about this in the literature, which overall has taken a rather rationalistic view while attempting to sort out the status quo of accrual accounting in the public sector (arguably with a few exceptions, including that of neo-institutional theorists).

Thus, the purpose of this study is to learn more about what is dominating local debates on accrual accounting. With respect to the data collection, the research focus is delimited to one local accrual accounting debate.

The empirical setting of the paper is a debate over accrual accounting in Norway with respect to the extent to which Norway should implement accrual accounting at central government

level. The debate was set off by an accrual accounting pilot project commencing in 2004 and ending in 2009.

The approach taken in this study is to examine the Norwegian accrual accounting debate by relying on actor network theory (ANT), a school of thought that is more regarded as a method than a theory and that is heavily influenced by the works of e.g. Latour (2005) and Law (1992).

This paper contributes by depicting the variety of actors (and devices) that might be mobilized in accounting debates. More specifically, the paper adds to the literature on accrual accounting in the public sector by unpacking how purification can bring the accrual accounting debate and policy making into an impasse. In this position, action and results are overtaken by politics, driven by overflowing effects and inverted accounting model implications. As such, ignorance of the hybrid properties of the accrual accounting technology disrupts the role of accounting in accounting change endeavors, thereby obscuring (the debate over) accounting in practice.

The remainder of the article is structured as follows: Firstly accrual accounting literature pertinent to focus of this paper is reviewed before actor network theory is outlined as the approach taken in this study. Thereafter follows the method section and subsequently the description of the case. This is then discussed, followed by concluding remarks.

## 2 Approach taken to study accrual accounting discussions at central government level

### 2.1 Actor network theory

ANT seeks to reassemble the social (Latour, 2005), thereby stressing the notion that we should not start by assuming the presence of well-defined social structures (Latour, 2005; Law, 1992). Starting by assuming the presence of social structures represents a position Latour (2005) refers to as the “sociology of the social”. The ANT view—that nothing is social by itself, but is only made social through various mediators—is what Latour (2005) refers to as the “sociology of associations”. ANT as a framework or method is not applicable to all settings, especially not slow moving settings, *“but in situations where innovation proliferates, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates, the sociology of the social is no longer able to trace actors’ new associations. At this point, the last thing to do would be to limit in advance the shape, size heterogeneity, and combination of associations ... you have to ‘follow the actors themselves’”* (Latour, 2005, pp. 11-12). In the latter situation, characterized by accelerating changes and where entities are multiplied, *“a relativistic solution has to be devised in order to remain able to move between frames of reference and to regain some sort of commensurability between traces ...* (Latour, 2005, p. 12)”. Latour later spells out *“the aim of this sociology of associations more precisely: there is no society, no social realm, and no social ties, but there exist translations between mediators that may generate traceable associations”* (Latour, 2005, p. 108).

In continuing down this path of reasoning, *“... social, for ANT, is the name of a type of momentary association which is characterized by the way it gathers together into new shapes”* (Latour, 2005, p. 65). In another phrasing, Latour (2005, pp. 64-65) depicts the term

social as *“a movement, a displacement, a transformation, a translation, an enrollment. It is an association between entities which are in no way recognizable as being social in the ordinary manner, except during the brief moment when they are reshuffled together.”* In his book Latour (2005, p. 59) in a nutshell explicates the ANT approach as one that: *“pictures a world made of concatenations of mediators where each point can be said to fully act.”* Latour (2005, p. 72) also states that *“the project of ANT is simply to extend the list and modify the shapes and figures of those assembled as participants and to design a way to make them act as a durable whole.”* Nevertheless, the network part of ANT is easily misunderstood: *“Network is concept, not a thing out there. It is a tool to help describe something, not what is being described”* (Latour, 2005, p. 131).

Latour (2005) suggests an ANT study is best undertaken by approaching five uncertainties (which he also refers to as controversies) relating to the social sciences—depicted to be the nature of groups, actions, objects, facts and the type of study being done (or more precisely, how it is accounted for, that is, written up as text). These five uncertainties represent *“... controversies about what the universe is made of”* (Latour, 2005, p. 21). Latour’s (2005) critique of the sociology of the social centers on the standard presumption of the existence of the social (forces) as fixed, durable sources—working as an input, and an essential source of explanation of a certain phenomenon. Latour (2005) advocates the need to see the social as an output of dynamic interactions amongst various actors, something that ought to be illustrated from their relative interrelated actions. As such, the five controversies are called upon to render the traces of the social more visible, and therefore represent essential building blocks in Latour’s (2005) sociology of associations. We elaborate on each of these controversies below.

*No group, only group formation:* To trace the social Latour (2005) suggests we should seek to map the controversies of group formation, rather than starting with a readymade group with established connections. One starting point is to identify spokespersons (and their belongings). Second, groups always position themselves by relating to other competing ties. Therefore, Latour (2005, p. 32) suggests that a list of anti-groups should be set up, allowing the researcher to rely on the actors themselves to map “*the social context in which they are placed*”. Third, each group, led by their spokesperson(s) will seek to define themselves, by drawing up boundaries: “*every group formation will be accompanied by the digging out of a wide range of features, mobilized to make the group boundary hold against the contradictory pressures of all the competing anti-groups that threaten to dissolve it*” (Latour, 2005, p. 33). Fourth, Latour (2005) accentuates the need to think broadly about the group (formations) to also include what might be called group supporters: “*among the many spokespersons that make possible the durable definition of groups, one must include social scientists, social sciences, social statistics, and social journalism.*” These expanded group members play a role in making groups durable or might inadvertently or deliberately lead to the group decaying or disappearing. Furthermore, to fulfill the aim of rendering the social visible, Latour (2005) puts forth performance at the center of attention, referred to as the performative definition, representing “*the means necessary to ceaselessly upkeep the groups and to the key contributions made by the analysts’ own resources*” (Latour, 2005, p. 35). Two essential concepts to Latour’s (2005) reasoning of what it means to produce the social are “mediators” versus “intermediaries”. Even though these concepts are located in relation to group formation they are repeatedly referred to by Latour (2005) across his other outlined uncertainties. “*An intermediary ... is what transports meaning or force without transformation: defining its inputs is enough to define its outputs. ... [with ]mediators, ... their input is never a good predictor of their output; their specificity has to be taken into account every time. Mediators*

*transform, translate, distort, and modify the meaning or the elements they are supposed to carry*” (Latour, 2005, p. 39). As such, mediators “*make others do unexpected things*” (Latour, 2005, p. 106).

*Action is overtaken:* The second source of uncertainty “*sees action as not transparent. Action is not done under the full control of consciousness; actions should rather be felt as a node, a knot, and a conglomerate of many surprising sets of agencies that have to be slowly disentangled*” (Latour, 2005, p. 44). The actor concept is vital in ANT, but it is not given the ordinary meaning of the word, as Latour (2005, 46) explains: “*To use the word ‘actor’ means that it’s never clear who and what is acting when we act since an actor on stage is never alone in acting*”. It is furthermore suggested that the actor metaphor must be unfolded, triggering the researcher to look for “*a complete dislocation of the action, warning us that it is not a coherent, controlled, well-rounded, and clean-edged affair ... action is dislocated ... borrowed, distributed, suggested, influenced, dominated, betrayed, translated*” (Latour, 2005, p. 46). While following the actor, Latour (2005) underscores that the analyst (of the social) should avoid the temptation to think of him/her self as superior to those being studied and by so doing fail to listen attentively to the actor. Failing this task easily leads the analyst to equate the actor’s statements with more familiar and well-established social theories and concepts. As a result Latour (2005, p. 48) asks: “*Will we have the courage not to substitute an unknown expression for a well-known one?*” This point is fortified by throwing the following challenge: “*We have to resist pretending that actors have only a language while the analyst processes the meta-language in which the first is ‘embedded’*” (Latour, 2005, p. 49). Moreover Latour (2005, p. 52) points out: “*agencies are always presented in an account as doing something.*” The presence of the social has to be demonstrated through the actors (Latour, 2005, p. 53). Latour (2005) also explains the concept of figuration, viewing it as

variations on a theme in the sense that the same phenomenon or actant may appear in different figurations. In a similar vein, figuration can be seen as the many ways in which actions take character. Moreover, according to Latour (2005, p. 56): *“actors also engage in criticizing other agencies accused of being fake, archaic, absurd, irrational, artificial, or illusory.”*

*Objects too have agency:* A main point in this regard is that the type of actors at work should be increased (see Latour, 2005, pp. 64-70). One of the peculiarities of ANT is the way it makes objects participants in the course of action. While addressing this topic, Latour (2005, p. 71) expounds on the meaning of actor and actant: *“... if we stick to our decision to start from the controversies about actors and agencies, then anything that does modify a state of affairs by making a difference is an actor—or if it has no figuration yet, an actant.”* Latour (2005, p. 72) underscores that essentiality of thoroughly exploring who and what participates in the action, even to the extent of considering the role of non-humans. However, studying non-humans are trickier than studying humans since objects help trace social connections only intermittently (Latour, 2005, pp. 74-78). When elaborating on the subject matter, Latour (2005, pp. 79-80) makes the following point: *“Objects by the very nature of their connections with humans quickly shift from being mediators to being intermediaries ... but still, there is a difference: once humans become mediators again, it is hard to stop them. ... whereas objects ... tend to recede into the background very fast, interrupting the stream of data—and the greater their importance , the faster they disappear.”* To alleviate the task of the analyst Latour (2005, p. 80) offers the following list of situations where an object’s activity is made easily available: First: study innovations in the artisan’s workshop, *“In these sites objects live a clearly multiple and complex life through meetings, plans, sketches, regulations and trials.”* Second, Latour (2005, p. 80-81) offers the following reasoning: *“... even the most routine, traditional and silent implements stop being taken for granted when they are approached by*

*users rendered ignorant and clumsy by distance.*” Three types of distance may enable the implement more alive, namely distance by means of time, space and skills (as in learning). The third type of occasion that makes object’s activities more easily visible “*is that offered by accidents, breakdowns, and strikes: all of a sudden, completely silent intermediaries become full blown mediators.*” A fourth alternative is to bring objects back to life by using archives, documents etc. Last, “*when everything else has failed, the resource of fiction can bring—through the use of counterfactual history, thought experiments, and ‘scientifiction’—the solid objects of today into the fluid stats where their connections with humans may make sense.*”

*Matter of facts vs. matters of concern:* While readdressing epistemology and ontology, Latour (2005) makes the point that people in general, but also scientists, have tended to believe in facts about how things work, what is real, etc. More recently however, researchers have started to question even more fundamental beliefs about these issues, whereby they shift status from matters of fact to matters of concerns. “*The mapping of scientific controversies about matters of concern should allow us to renew from top to bottom the very scene of empiricism—and hence the divide between ‘natural’ and ‘social’*” (Latour, 2005, p. 114). He continues, making the point that with the shift from matters of fact toward matters of concerns: “*It is the thing itself that has been allowed to be deployed as multiple*” (Latour, 2005, p. 116). Thus, the thing in question can often do more things or is more unstable than previously imagined. This is also regarded as a move from metaphysics to ontology. Controversies over the latter “turn out to be just as interesting and controversial as metaphysics” (Latour, 2005, p. 118). Another to do list is offered by Latour (2005): First, scientific facts are fabricated and therefore “*exist in many different shapes and at very different stages of completion.*” These sites are no longer confined to laboratories. Social ties will thus increasingly, with the development of science and technology, be rendered



physically traceable. Third, experiments generate controversies something that makes it easier to obtain information. “Fourth, ... the very difference between matters of fact and matters of concern has been made publicly available by the growing intensity of controversies over ‘natural things’ ” (Latour, 2005, p. 119).

### **3 Data collection methods**

This study relied on both internal documents and external documents (i.e., official documents that were released to the public). In the Norwegian accrual accounting project, specific and general guidelines and standards were namely prepared by the project group and distributed to all the pilots to guide their work in the project. These internal documents covered several topics ranging from the agencies’ history and competence, draft versions of accounting standards, material that was made available for presentation at the seminars, e-mail communication between project participants (when it was made available to the researcher), templates for the work that had to be performed on the opening balance sheet, and questions and answers relating to the project evaluation. One set of document relied on in this study include evaluation reports covering the evaluation of experiences and summary descriptions of the accrual accounting project. This, then, includes publically available documents, such as official governmental publications (e.g. central government budget reports and the report by the commission disclosed in 2003 (Ministry of Finance, 2003a) engaging the question of whether accrual accounting seemed suitable for the central government. The study also relied on the roadmap paper (Ministry of Finance, 2006c) to obtain insights about the overall policy assessments at an early stage in the pilot project. Nevertheless, newspaper articles (see Section 4.2) serve as the main ingredient in the description that follows of the public debate

regarding accrual accounting and the pilot project. These newspaper articles were identified via different search techniques, including search in databases covering national newspapers (typically available on the newspapers' home pages), cross referencing in the articles, whereby one or more previously published viewpoints are targeted in the discussion—a method similar to the snowballing approach (see Saunders, 2000). Finally, the Google search engine was also used as a general instrument to locate newspaper articles, reports and similar relating to accrual accounting at central government level in Norway.

#### **4. Case description**

##### *4.1 The birth and early phases of the accrual accounting endeavor at central government level*

An accrual accounting pilot project took place at central government level in Norway during 2004-2009. It started formally with a government appointed committee (the Ministry of Finance, 2003a) considering whether Norway would benefit from introducing accrual accounting at central government level. It gave a favorable assessment. The Ministry of Finance, the central government, and the parliament in Norway viewed having accrual accounting at central government level as promising, but were uncertain about the extent or in which form it should potentially be implemented (see, the Ministry of Finance, 2003b). To gain more experience with accrual accounting before deciding the matter, an accrual accounting experimental (pilot) project was established in 2004. The first step taken was determining and interpreting project goals and objectives. Next in line was the task of developing preliminary accrual accounting standards and testing them in the pilot project,

involving ten (later eleven) subordinated central government agencies and their head ministries.

A project group, consisting partly of auditors with most of their experience from the private sector, met with each of the initial ten (later eleven) pilots approximately two-three times a year in pilot meetings. The majority of the time during pilot meetings was spent on discussing technical details about the last accounting disclosure by the agency in question. In this way, pilot meetings served as a valuable way of checking the pragmatism of the reporting package. Organizational issues were also discussed frequently. This allowed participants to get to know each other, as well as to remain up to date concerning organizational changes. Project administration was also given some attention, such as questions concerning the future of the project. Yet, the pilots' primary concern seemed to be to learn how to account for a transaction or event and to ensure compliance with the reporting package.

The project was evaluated in 2006 (see Statskonsult, 2006, The Ministry of Finance, 2006a, The Ministry of Finance, 2006b). It was concluded that too little experience had been gained, particularly about potential benefits from accrual accounting, to allow for a final conclusion to be made about the way forward. Thereafter, a new project period followed, ending in 2009 (see The Government Agency for Financial Management, 2009a, The Government Agency for Financial Management, 2009b), with the conclusion that there will be no formal change in central government accounting (see Halvorsen, 2009). This decision was made although the overall project experiences were generally speaking reported to be favorable. It is therefore of interest to learn more about underlying controversies and who took an interest in discussing the accrual accounting development in Norway. In particular, included in the Ministry of Finance's (2009) summary view of the pilot project was a

reference to unintended functions and effects that may result from accrual accounting. This included the comments made by the NCTU in their consultative paper, where they expressed their view concerning the pilot project. Hence, NCTU appear as a key stakeholder in debate on accrual accounting. However, what or whom did it mobilize to exert influence on the Ministry of Finance (including the Minister of Finance)? What controversies were pertinent, and did they shift along the way during the debate? Basically, this begs the question (presented in the introduction): what was dominating the public debate on accrual accounting at central government level in Norway? To learn more about this the paper continues by unpacking the public debate on accrual accounting.

#### *4.2. The flamboyant and influential Norwegian public debate on accrual accounting*

During the accrual accounting project, some presentations were made at different external seminars by employees from the Ministry of Finance and the SSØ as well as by some of the representatives for the pilots. Similarly, some articles were also published (Klepsvik, 2005; Olgyai, 2007) that were primarily of a formal character, intended to inform about the work being performed in the accrual accounting project. In contrast, other articles took a stand either for or against accrual accounting or provided normative views on matters they believed to be important (e.g., Bredal, 2003; Johnsen, 2003). Neither of these presentations or articles created much turmoil. However, the debate escalated in 2005 when an employee (Voldnes, 2005) of the NCTU wrote the following:

The use of the Norwegian Accounting Act at the municipal and central government level implies a full opening for commercial rules of conduct in public service production. This is a dramatic violation of the basis of the welfare state.

The quote represents an ideological statement by the NCTU worker (Voldnes, 2005), and it sends an alert about the problems that accrual accounting will bring to the public sector (according to Voldnes). On this issue, Voldnes (2005) decided to mention the local government level even though the accrual accounting project in question solely targeted the central government level. A plausible reason for this was that in principle, if accrual accounting was found to be successful at the central government level, it could later be implemented at the local government level as well. Voldnes (2005) argued that the Norwegian Accounting Act, which regulates private sector accounting rules in Norway, lay the basis for transferring public goods to the private sector. Voldnes (2005) continued by asking whether efficiency was truly the goal of implementing accrual accounting or whether there were other underlying motives. Marianne Andreassen, the leader of the SSØ, an agency subordinated the Ministry of Finance, commented on Voldnes' article. Andreassen dismissed the alleged connection between accrual accounting and privatization, arguing instead that accrual accounting provides new information that can lay the foundation for the more efficient use of resources (Andreassen, 2005). Voldnes (2006) nevertheless continued the debate, primarily by maintaining her earlier statements (see Voldnes, 2005), and stressed that the implementation of accrual accounting and the reliance on private sector accounting solutions are closely connected. To support her viewpoint, Voldnes (2006) pointed to the experience of New Zealand, adding the following:

The rules in question are not primarily about accruing of expenses as many believe, but rather about international accounting rules aiming for free float of capital.

The experiences of Sweden and New Zealand were introduced as illustrations of countries that had not experienced efficiency gains from implementing accrual accounting, and another employee of the NCTU expressed similar viewpoints in a subsequently published article (Sandås, 2006):

Is accounting in the public sector from now on going to follow the same bookkeeping rules as the private sector with a bottom line...? ...will Parliament lose political control over the taxpayers' money?

In August 2006, the NCTU arranged a seminar and invited Susan Newberry, an accounting scholar, to speak. She discussed the experiences with accrual accounting in New Zealand and advised that Norway should ensure that Parliament remains in constitutional control over the central government's funds, even after accrual accounting is (potentially) implemented. At the seminar, in which the researcher participated, one of the representatives from NCTU stated the following:

We (i.e., NCTU) will do whatever it takes to stop this reform.

Aligned with this statement, beyond simply writing articles about accrual accounting and the pilot project, the NCTU also began to fund research projects focusing on accrual accounting, in which academics and a research organization called Fafo were involved. The NCTU, being a co-founder of Fafo, assigned Fafo to conduct studies about accrual accounting. The findings of these studies (e.g., Jensen, 2007; Tranøy, 2009) were generally critical in nature regarding the merits of accrual accounting and advocated other accounting models or solutions, such as cameralistic accounting (see, e.g., Monsen, 2008), when

considering what accounting model could best replace the existing modified cash accounting model.

Via informal conversations with pilot project participants, I learned that NCTU, when taking an interest in the pilot project, sought to obtain as much information as possible about the project. While pursuing this matter, they contacted the Ministry of Finance and asked for more information. Early on, the Ministry of Finance hesitated to give NCTU more access than other parties that were not formally part of the pilot project. The NCTU soon grew frustrated by this lack of full information and transparency. For this reason, they spoke of the pilot project as “the secret project”. Nevertheless, the NCTU continued to exert pressure on the Ministry of Finance, demanding to receive more information about the project. In response, the Ministry of Finance disclosed more information. Preliminary drafts of the accounting standards and some project reports and documents were, for instance, made official during this period. Moreover, the Ministry of Finance had meetings with the NCTU in which the pilot project was discussed. Paradoxically, part of this discussion included the accounting solutions that had been tailor-made during the pilot project to prevent them (the solutions), in a variety of ways, from having steering effects (for a discussion, see the Ministry of Finance, 2006c; 2008).

Nevertheless, the NCTU was apparently not reassured by what they read or were told, and they continued the public debate, which intensified in 2008 and gained additional momentum during the spring of 2009. The criticism focused on two main issues: the idea of having accrual accounting at the central government level in Norway and the role of the SSØ.

Roughly speaking, there were three main parties in the debate: one for accrual accounting, one against accrual accounting, and one being a facilitator. The latter function was

preoccupied by Lie,<sup>1</sup> who served as a facilitator by fuelling the debate, and he did so by writing several newspaper articles based on interviews with representatives from the two sides and by gathering information from documents and meetings (particularly meetings arranged by the NCTU). The side for accrual accounting was represented primarily by the pilot project organizers (representatives from the SSØ and the Ministry of Finance) and the Norwegian Institute of Public Accountants (represented by Harald Brandsås, the Technical Director). Those against accrual accounting were represented primarily by representatives of the NCTU (providing information to Lie) and researchers (primarily those who conducted research funded by the NCTU, e.g., Monsen, Jensen, Tranøy and Østre). The two sides were unable to agree on the functions of accounting (e.g., Mellemvik et al., 1988; Newberry and Pallot, 2005), including the role or appropriateness of accruals at the central government level. Moreover, the debate turned into a discussion about what role the SSØ should have at the central government level, and remarks were made about the need to shut down the SSØ. Rather than reaching a consensus, the parties seemingly moved further apart as the arguments became more intense and people became more agitated. Most of the debate was held through a newspaper called “Klassekampen”, which is dedicated to the political left in Norway (according to its homepage<sup>2</sup>). An overview of the titles, contributors and dates of many articles (published in Klassekampen) written on the subject is displayed in Table 3 below.

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<sup>1</sup> Sverre Arne Lie has been an agricultural researcher, affiliated with Fagforbundet (a section within NCTU) and a journalist at the newspapers “Klassekampen” and “Nationen”.

<sup>2</sup> [http://www.klassekampen.no/om\\_oss](http://www.klassekampen.no/om_oss)



Table 3

Headings of articles in Klassekampen that focused on the accrual accounting debate

14 <sup>th</sup> February 2009: “A central government without steering” (Lie, journalist at Klassekampen)
28 <sup>th</sup> February 2009: “Does not support market-oriented steering” (Lie, journalist at Klassekampen)
4 <sup>th</sup> March 2009: “NCTU reprimands the SSØ” (Lie, journalist at Klassekampen)
13 <sup>th</sup> March 2009: “Increased development and interaction at central government level” ” (Marianne Andreassen, Director, SSØ)
21 <sup>st</sup> March 2009: “A tool for the community” (Ole Morten Gving, Secretary of State, Ministry of Finance)
26 <sup>th</sup> March 2009: “Foggy wording: What does new public management mean?” (Stein Østre, Professor)
4 <sup>th</sup> April 2009: “From ‘Foggy wording to complete confusion’” (Marianne Andreassen, Director, SSØ)
21 <sup>st</sup> April 2009: “Still foggy from Stein Østre”” (Marianne Andreassen, Director, SSØ)
28 <sup>th</sup> May 2009: “Auditors rules” (Lie, journalist at Klassekampen)
30 <sup>th</sup> May 2009: “Hanssen rejects the SSØ” (Lie, journalist at Klassekampen)
3 <sup>rd</sup> June 2009: “In opposition with its own government” (Lie, journalist at Klassekampen)
3 <sup>rd</sup> June 2009: “Wrong about management control” (Ole Morten Gving, Secretary of State, Ministry of Finance)
4 <sup>th</sup> June 2009: “Not our note” (Lie, journalist at Klassekampen)
4 <sup>th</sup> June 2009: “Accounting in the public sector” (Norvald Monsen, Professor)
6 <sup>th</sup> June 2009: “Copying the private sector” (Lie, journalist at Klassekampen)

9<sup>th</sup> June 2009: “Minister without power?” (Lie, journalist at Klassekampen)

9<sup>th</sup> June 2009: “The democracy may be weakened” (Bjarne Jensen, Professor)

13<sup>th</sup> June 2009: “A democratic problem” (Bent Sofus Tranøy, Associate Professor)

17<sup>th</sup> June 2009: “A democratic problem?” (Harald Brandsås, Technical Director, the Norwegian Institute of Public Accountant)

20<sup>th</sup> June 2009: “Reply regarding central government accounting” (Bent Sofus Tranøy, Associate Professor)

24<sup>th</sup> June 2009: “No change in central government accounting” (Kristin Halvorsen, Minister of Finance)

The level of frustration became increasingly obvious as the debate continued, which could be observed from the content of an article published in the Klassekampen on 3<sup>rd</sup> June by Geving<sup>3</sup> (2009). Geving decided to retaliate against the fierce criticism directed toward the Ministry of Finance and the SSØ:

Klassekampen has in recent days published several stories about the SSØ and the work undertaken on testing (new) central government accounting standards. It is portrayed as if the Ministry of Finance and the SSØ actively facilitate privatization, outsourcing and new steering principles in the direction of new public management. This is as wrong as it gets. The articles contain factual errors, undocumented claims and a large dose of conspiracy theories regarding the roles of the Ministry of Finance and the SSØ . . . . I must say that I do not understand what kind of reality they live in, those who seriously allege and believe that this central government and the Ministry

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<sup>3</sup> At the time, Geving was a secretary of the central government (a political position) in the Ministry of Finance.

of Finance, led by Kristin Halvorsen, run a grand and secretive work to facilitate such a development. This is unbelievable.

However, despite the various contributions to the debate, it never came close to reconciliation until the Minister of Finance, on June 24<sup>th</sup>, 2009, posted an announcement on the Ministry of Finance's home page referring to the aforementioned debate in the newspaper "Klassekampen". The public announcement made by the Minister of Finance (Halvorsen, 2009) was entitled, "No change in central government accounting." The substance of the announcement re-addressed core issues advanced by the opposing side of the public debate and orchestrated by the NCTU. The article specifically contained the opposing party's rhetorical phrases and concerns, with assurance being given that this (i.e. what the opposing party feared) would never happen. It is noteworthy that this announcement was made prior to the Ministry of Finance's pre-set announcement of its recommendation regarding the pilot project. Earlier, it was stated that the final CBA and the conclusions would be reported while presenting the central government's budget for the year 2010 (scheduled to be presented in early October 2009).

With this, little doubt was left as to the NCTU's influence on the accrual accounting project. This view was substantiated by statements made by the Ministry of Finance in the pilot project summary assessment, with references made to privatization and overall steering reform via accrual accounting. In its submission, where the NCTU had been invited to comment on the project alongside other stakeholders, the NCTU cautioned about precisely the same things, such as parliamentary control with public money, market orientation and preparations being made for privatization (Ministry of Finance, 2009, p. 106). Therefore, it seems as though the Ministry of Finance (2009) targeted the NCTU when emphasizing that the developed accrual accounting standards had nothing to do with privatization.

During the fall of 2009, researchers from Fafo published a report that they had been assigned to prepare by NCTU. The report focused on various actors' attitudes and experiences with the accrual accounting solutions. The researchers interviewed representatives from the University of Oslo and two of the pilot project agencies. The University of Oslo has experience with the accrual accounting solutions because its head ministry (of education and research) had made the accrual accounting solutions (developed in the pilot project) mandatory since 2007. Having closely monitored the public debate on accruals and reflected on it as well as having conducted the aforementioned interviews, (the Fafo researchers) Berge, Hagen and Trygstad (2009, p. 70) concluded the following:

The objective, what is to be achieved, is the starting point for every initiative. At the same time, the initiative incurs costs. Studies of a field that is strongly value loaded with advocates and opponents imply challenges for the research undertaken. The more complicated a matter is, the more challenging it gets. The advocates will strongly emphasize positive traits and seek to promote the negative effects as less severe than the positive ones – it is embedded in the (ex ante) objective. The opponents will emphasize the known and unknown costs. A strong positive or negative attitude toward accounting model changes will probably affect the way in which the actors interpret the costs and benefits. In this project, we have clearly registered these (vivid) attitudes in the public debate. We acknowledge that despite there being differences between our informants' perceptions and assessments, we do not recognize (in those statements) the polar positions that are seen in the public debate over the new central government accounting standards.

They also stated that the informants' opinions have, to a greater or lesser extent, been formed by the public debate (Berge, Hagen and Trygstad, 2009, p. 23).

Even though the public debate on accrual accounting at the central government level in Norway ended in 2009, with the Minister of Finance reassuring that no change would be made to central government accounting, a group of parliamentarians decided to re-address this issue. On March 7<sup>th</sup>, 2012, they presented a proposal that was made subject to a vote in the parliament in the near future, suggesting that accrual accounting be implemented at the central government level. In doing so, this group paraphrased the Ministry of Finance's (2009) positive assessment and acknowledged that little had changed since then. They later made a statement that informed the public about the challenges experienced when debating the potential for applying accrual accounting at the central government level:

We have witnessed considerable opposition in the central government administration with regards to implementing accrual accounting (Parliamentarian proposal 73 S, 2012, p. 2).

Subsequently, the need for the Ministry of Finance to emphasize that the accrual accounting solutions would not represent a threat to privatization or changes in governmental steering was noted. Furthermore, the point was made that it is rather sad to see that a technical matter such as the potential implementation of accrual accounting at the central government level has become a subject of ideology (Parliamentarian proposal 73 S, 2012).

## 5 Discussion

### (THIS SECTION IS NOT COMPLETED)

The case description points to several controversies creating turmoil, frustration and changes, including the following:

- Controversies over what the project was all about
- Technically speaking, there was a controversy over the meaning and content of the standards
- Overall, controversies regarding the outcome of applying accrual accounting, which in ANT terms represent a dispute over the extent to which accounting is an intermediary or a mediator.
- Controversies over the role of the SSØ
- Controversies regarding NPM

What started off as a fragmented and rather careful debate, ended up with two main group formations, those speaking on behalf of the project and favoring the experimentation on the one hand on those opposing the notion of accrual accounting on the other hand. The opposing side was led by NCTU. They formed a group consisting of researchers and various individuals within its organization. In the debate the following types of researchers could be identified, and related to NCTU:

- Hired researchers
- Fafo researchers
- Susan Newberry

During the debate, several translations were made by the spectators, including the following translations:

- Translations of technical standards into a societal and political problem
- Transformation of the experience from other countries into becoming Norwegian equivalents.
- Transformation from an accounting issue toward a core NPM element subsequently made out to be some sort of systemic plague
- The translation of silence or plainly ordinary practices into being a secretive/hidden agenda.
- Various translations take place as different actors with the same actor groups take turn on responding to the viewpoints from the other side.

Although different media channels were enrolled in the debate, the newspaper Klassekampen was at the centre of attention, publishing more stories about the accrual accounting project than other newspapers. These cases were predominantly written by one journalist, namely Lie. He spoke with many people and ended up fuelling the debate. Essentially, Lie served the role as an instigator and thus ended up acting as a mediator rather than seizing a mere intermediary role as a journalist.

## **6 Concluding remarks**

This paper examines the debate over accrual accounting at central government level in Norway. The purpose is to learn more about what or whom is dominating such debates and thereby shaping the accounting policy making.

The debate had two main camps, one led by those constructing and experimenting with the accounting technology, namely the Ministry of finance and its associates. The other camp was led by the Norwegian Confederation of Trade Unions (NCTU) and its associates. With the passage of time, the debate became deadlocked, action was overtaken, whereby the focus shifted from a discussion about accounting toward the networks and individual actors composing the debate. Rather than approaching each other and reaching a consensus, the discussants slipped further and further apart, grasping polar positions. One side—led by the Ministry of Finance, purified the technicalities of the newly developed (and tailor-made) accrual accounting model. The other side—led by the NCTU, purified the cultural aspect of the accrual accounting change endeavor. The NCTU achieved this by leaning on the experience of others—arguing that accrual accounting technology invokes a democratic problem, depriving the public sector of its resources. This represents an overflow effect whereby the alleged properties of other (and different) accrual accounting models became much more important than what could be deduced from the accounting model in question—effectively inverting the accrual accounting implications.

This paper contributes by depicting the variety of actors (and devices) that might be mobilized in accounting debates. More specifically, the paper adds to the literature on accrual accounting in the public sector by unpacking how purification can bring the accrual accounting debate and policy making into an impasse. In this position, action and results are overtaken by politics, driven by overflowing effects and inverted accounting model implications. As such, ignorance of the hybrid properties of the accrual accounting technology disrupts the role of accounting in accounting change endeavors, thereby obscuring (the debate over) accounting in practice.



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## Revenues - a driver for sporting success in Norwegian football?

Morten Kringstad and Tor-Eirik Olsen

*Work in progress: Note that results are preliminary. We have only recently gained access to new data (2011 season). At the same time we are waiting for the final league standing for the 2013 season. Some results (only results, the paper has not been rewritten and does not take these changes into account) are presented for the 2011 season as well as for the seasons combined.*

### Abstract

Although previous research has shown that there is an association between sporting success, measured by final league standing, and budgeted revenues, where richer teams (e.g. with larger budgets) typically perform better at sport than the other teams, this was not supported by a recent Norwegian newspaper article. Drawing on the 2012 season in the Norwegian top division, the newspaper article concluded that there were only traces of evidence suggesting that the teams' level of budget prior to the season actually impacted on the final league standing.

Using the same data as in the newspaper article, we show that these claims are somewhat misleading and at best true only to some extent. As an extension of this, what is interesting is that in our simple regression model, budgeted revenues explain about 33 % of the variation in final league standing. This is high given that we are analysing only one season. It is also high compared to findings in other studies (e.g., Szymanski and Kuypers, 1999). Interestingly, and in defence of the newspaper article, findings show that a duality is present. Whereas there is a significant association between final league standing and budgeted revenues for the bottom half, no such association was found in the top half. Analysing this in more detail, we found that the association for the bottom 12 was even more prevalent than for the bottom eight (of 16 teams). These findings hold for both final league standing and point percentage.

## Introduction

In a recent Norwegian newspaper article<sup>1</sup> it was argued that final league standing (among the 16 teams) in the Norwegian top division in football for the 2012 season was more or less independent of the teams' level of the budgeted revenues prior to the season. This is surprising given the findings from other sports, football included. To illustrate, in terms of the latter, Szymanski and Kuypers (1999) found a very strong relationship between sporting success, measured by final league standing, and wage expenditure across 20 seasons. In their regression analysis, wage expenditure explained 92 % of the variation in final league standing.

Although budgeted revenues and costs are different by nature, in the context of sporting success a strong correlation between the two is expected. Further, the reason to believe that higher level of costs will increase the probability of performing better goes back to the seminal paper within sports economics by Rottenberg (1956). Moreover, it can be argued as in Buraimo (2008), who is referring to Simmons and Forrest (2004) and Hall et al. (2002), that wage costs should be a strong driver for the sporting quality of a team. Today this is even more topical with a nearly free labour market for football players in Europe, where (the possibility for) player mobility is high and (also) "players move between teams in order to maximize their salaries" (Buraimo, 2008, p. 516). Further, Hall et al. (2002, p. 150) claim that "Not only are soccer clubs free to buy a better team in the market but the market worldwide is large enough to ensure that such a team can be assembled relatively quickly, and consequently spending determines success." The same arguments also hold for revenues. As such, revenue distribution is a driver for sporting outcome because differences in the ability to attract playing talent mean that wages can be one way of winning player signatures.

The motivation for this paper is twofold. First other than the newspaper article, we have only limited knowledge of the association between budgeted revenues and final league standing in the Norwegian top division. Even more important, the claims set forth in the newspaper article are derived from a rather crude analysis. Although it is tempting, at least at first glance, to claim that no such association exists, we extend this analysis by adopting a more refined approach. As such, drawing on the same data as in the newspaper article, a more thorough statistical analysis of the association between budgeted revenues and final league standing is carried out building on correlations and regression models. In this respect, we distinguish between three separate levels of analysis: i) the total sample, ii) top half and bottom half, and lastly, iii) we use quartiles along with the bottom 12. Based on these analyses, we claim that although there is some sense of truth in the claims set forth, they are far too aggregated to portray the whole story.

In line with this, our main hypothesis is based on evidence from earlier literature, both empirical and theoretical, that larger-budget clubs perform better in sport compared to smaller-budget clubs in Norwegian football in the 2012 season. Thus, this paper will focus on the relationship between financial strength and sporting outcome.

The rest of the paper is organized as follows. The second section reviews literature dealing with the relationship between financial strength and sporting performance. The third section

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<sup>1</sup> Solem (2013).

covers methods, whereas in the fourth section, data and models are presented. The empirical results are presented in the following section, followed by conclusions and discussion in the final section.

## Literature review

Our theoretical framework is presented in Figure 1. This figure shows that the revenue distribution among the teams in a league is hypothesized to be a driver for the final league standing. The hypothesis is based on the assumption that differences in revenues reflect different teams' ability to attract playing talent, where wages are the means to win player signature (partly) through an auction process. The final league standing is expected to be a function of this distribution of playing talent.

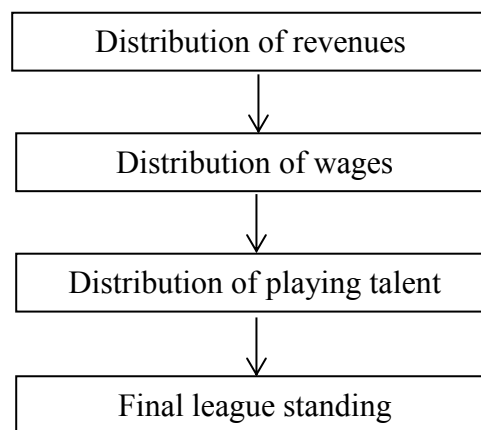


Figure 1: The relationship between distribution of revenues and final league standing

The literature on the economics of professional team sports has concerned all of these parts, as well as their relationship(s). For example, final league standing is a part of the competitive balance literature (see, for example, Kringstad and Gerrard, 2007), while how teams can perform better than what would be expected from the revenue distribution is related to the Moneyball terminology (see, Gerrard, 2007).<sup>2</sup>

On a more general basis, sports leagues have always been engaged in the relationship between competitive balance and the distribution of financial capacity among the teams. Rottenberg (1956) also shows this problem, referring back to the first professional league (in baseball) and the problems with an open labour market in a league with teams of different financial strength. According to Fort (2011) the next professional league, the National League in baseball, founded in 1876, was also organized under a free market. However, by 1889 all teams in the league had included regulations and restrictions in the labour market, such as the reserve clause. On the other side of the Atlantic, too, labour market restrictions in form of the retain-and-transfer system were introduced before the 1893/94 season in English

<sup>2</sup> Gerrard (2007, p. 207): “Michael Lewis' bestseller, *Moneyball: The Art of Winning an Unfair Game* (2003), tells the story of how the Oakland Athletics in Major League Baseball (MLB) have achieved a sustained competitive advantage over an eight-year period despite being one of the lowest wage spenders.”

football (Green, 1953), just a few years after the formation of the Football League in 1888. In addition, according to Green, maximum wages were introduced before the 1901/02 season, preventing the bigger teams from outbidding the smaller teams for their best players. Of course, the purposes of these restrictions were dual, as they also included a form of financial protection of the teams in the league as a collective.

Academically, Rottenberg (1956) argued through what is referred to as Rottenberg's invariance proposition that, for example, restricting the free agency system for transfers of players is not a tool for improving competitive balance. Downward and Dawson (2000) claim that the same arguments can be used for salary caps as well. The arguments here are related to the distribution of revenues and marginal revenue product.<sup>3</sup> In the case of strong regulations on the labour market, wage costs may not be as good a predictor for the distribution of sporting quality as in a free-agent situation. Therefore, prediction of the distribution of sporting quality has been measured using both the distribution of revenues and the distribution of wages (e.g. Hoehn and Szymanski, 1999; Szymanski and Kuypers, 1999; Gerrard, 2006; Fort, 2011). However, a problem when applying wages is that external accounting may only register the total wage costs, without clearly distinguishing between the sporting and administrative parts. Thus, against this background it is possible to argue that revenues and total costs might be as good predictors of sporting quality as total wage costs. Especially in European team sports revenues and costs should be very strongly correlated. Further, the difference (i.e. profit) is expected to be small. As such, going back to the literature focusing on the objective owners in professional team sports in Europe, it might be a question of win maximization, subject to financial restrictions rather than profit maximization (see, for example, Sloane, 1971 and Késenne, 1996).

In Szymanski and Kuypers (1999), the R-square referred to in the introduction may be affected by the sampling which is across the four levels of the professional hierarchy in English football. This implies that teams may compete on a sporting level (a given division in a hierarchy) that more or less fits with the teams' financial capacity or level. In addition, parts of wages (i.e. bonuses) may be driven by sporting success. In other words, it should not be taken for granted that the independent variable is independent of the dependent variable (interaction between the dependent and the independent variables).<sup>4</sup>

Based on the discussion above, the distribution of total budgeted revenues or costs in a league may therefore be hypothesized to be an appropriate predictor of differences in sporting quality between the teams in a league. Therefore, for example, total costs per point or per win can be seen as measures of sporting efficiency on a given level of costs (Gerrard, 2007). In this paper, budgeted revenues will be applied as a proxy for predicting the relative ex ante sporting quality between the teams. The argument for applying distribution of revenues as a predictor of sporting success also goes back to Rottenberg (1956), and the invariance proposition mentioned above, through a hypothesis that playing talent will be distributed among the teams on the basis of their marginal revenue product. Therefore, the main hypothesis is that budgeted revenues are a positive and significant driver for sporting outcome.

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<sup>3</sup> Marginal revenue product is a concept used to describe a player's contribution to the team's revenues (see Scully, 1974, for a comprehensive description of this concept).

<sup>4</sup> Addressing causality, Granger causality test is often used. However, this requires time-series data. Thus, this test is not applicable for this dataset.



The background of this paper is based on the hypothesis that financial inequality is a significant driver for the distribution of the sporting quality among the teams in a league. However, there are a number of issues associated with this relationship. The budgeted revenues are of course a prediction of the revenues in a future period of time, and are therefore not an observation of an exact state. In other words, issues of relevance may occur between the finalization of a budget and the exact ex post measure of the distribution of sporting outcome (such as the final league standing). In addition, the budget may also be affected by subjective expectations that may differ between the teams, such as predictions of the financial value of player trading. Especially in what Gerrard (2007) refers to as “complex invasion team sports”, such as football, many elements of the play can be expected to increase the unexplained variation in a regression analysis, where sporting performance is the dependent variable on budget, compared to, for example, a less complex team sport such as baseball. The number of seasons should also be relevant here, and it is therefore not surprising to observe that the explanatory power is much smaller when analysing single seasons compared to an aggregate number of seasons. This was also evident in Szymanski and Kuypers (1999) for English football and in Hall et al. (2002) who compared English football and Major League Baseball (MLB). Even if Hall et al. (2002) found that the explanatory power (measured by  $R^2$ ) was generally smaller in the MLB, their season-to-season analysis of wages as a driver for win percentage shows that throughout the 1990s this driver has become significant, and hence had increased to an average of about .43. On this basis, Hall et al. (p. 150) state that “...the sharply growing revenue disparities in MLB since 1990 have reopened the opportunity to differentiate team performance through payroll.” This was also evident in Fort (2011), where the Gini coefficient for revenues in the MLB for the 1990s averaged to .15 before the strike in the 1994/95 season and .20 after the strike. The corresponding Gini coefficients for payroll were respectively .15 and .21.

Finally, an issue to be aware of when conducting studies comparing sporting performance and financial power is that accounting items will be affected not only by accounting principles, but also by how a club is organized. In sports, these may be affected by broader strategic issues, such as whether the club owns its own stadium or, alternatively, is renting the stadium. Another point of relevance here is that in a smaller league, teams may have a different focus on player development, with some seeking to establish cooperation with bigger clubs abroad, while others strive towards being totally independent. Such a strategy can affect both the cost and the revenue aspects of the accounts. For example, achieving sporting success with players on loan may on the one hand give lower costs, but on the other hand prevent the club from profiting on potential player transfers. Even in a situation where the net outcome would have been the same for two teams (same net costs), the value on the cost side and the revenue side of the profit and loss account may differ, something that will affect the budgeted levels to a greater or lesser degree. Although these issues are important, they are nonetheless beyond the scope of this paper.

## Methods

When investigating the association between budget and final league standing, three different levels of analysis are employed in which the selection criteria draw on the final league standing attained. For one, the total sample ( $n=16$ ) is the starting point. However, in addition the sample is split into two separate parts; top half ( $n=8$ ) and bottom half ( $n=8$ ). Finally, the third level of analysis drawn upon in this study is quartiles ( $n=4$  in each quartile). Different methods are used for the different levels of analysis. These are described in the following (sub) section. It is also worth noting that it is expected that the relative level of budgeted revenues is a driver for sporting performance in a league (such as final league standing and point score). This in turn implies that the tests conducted should be one-sided, in the expected direction. This is also the approach taken in this paper.

Given the small data sample, we first want to investigate the different samples applied in this study to decide whether parametric or non-parametric tests should be used. According to Field (2000, pp. 37-38), it is important to address the following assumptions underlying parametric data: 1) normally distributed data, 2) homogeneity of variance, 3) interval data, and 4) independence. In the context of this study, the assumption of independence can be questioned as envisaged by game-theoretical approaches (e.g., Haugen and Solberg, 2010). Overall, caution should be used in claiming independence, as the actions taken by one club (e.g., increasing budgeted revenues) may also impact on the actions taken by other clubs in the same league. Due to the relatively small sample sizes used here, the assumption of normally distributed data was given serious consideration. In this respect, several approaches were taken, including inspections of histograms<sup>5</sup> coupled with skewness and kurtosis along with the Kolmogorov-Smirnov<sup>6</sup> test and the Shapiro-Wilk test.<sup>7</sup> Overall, tests indicated some normality problems. This was in particular the case for the whole sample<sup>8</sup> as well as quartile 2. Therefore, both parametric and non-parametric methods are used.

Four groups of methods will be applied when analysing the relationship between budgeted revenues and performance. These are correlation analysis, two-sample tests, regression analysis with budgeted revenues as the main driver, and analysis of possible structural breaks in the relationship between budgeted revenues and sporting performance.

First, correlation analysis forms a natural starting point for investigating the relationship between two variables. Here, this is done by calculating the correlation coefficients between the level of budgeted revenues and the final league standing. In some of the analysis the final

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<sup>5</sup> Although histograms are a very useful starting point in addressing deviation from normality, 'they do not tell us whether this deviation is large enough to be important' (Field, 2000, p. 48).

<sup>6</sup> The Kolmogorov-Smirnov test was originally a nonparametric test. However, a modified version can be used to for testing the normality of the distribution. Other alternatives are the Shapiro-Wilk test and the Anderson-Darling test. According to Stephens (1974), these tests are actually more powerful than the Kolmogorov-Smirnov test when it comes to addressing normality.

<sup>7</sup> The Shapiro-Wilk test was included because it is more powerful than the Kolmogorov-Smirnov test when addressing normality (Stephens, 1974).

<sup>8</sup> It should, however, be noted that the Kolmogorov-Smirnov test and the Shapiro-Wilk test gave conflicting results. However, since the latter is more powerful in this context, assuming normality can be questioned.

league standing (rank of sporting performance) is replaced by point percentage, as argued in Hall et al. (2002).<sup>9</sup> This is done using the Pearson correlation coefficient,  $r$  (Kanji, 1993).

In addition to Pearson's  $r$ , the sports economics literature (e.g., Daly and Moore, 1981) has applied the Spearman's rank correlation coefficient (SRCC) when measuring performance persistence in the context of competitive balance.<sup>10</sup> This method is non-parametric. For the purpose of this paper, it is possible to rank sporting performance both through the final league standing and by the budgeted revenues.

Second, differences between teams in the different sub-samples of the final league standing (final table) are analysed by drawing on a number of methods for comparison. Two-sample  $t$ -tests are used here to analyse differences between top half and bottom half, the top four against the rest of the teams, as well as differences between the different quartiles in terms of the relationship between final league standing and budget. Assuming that variances are unknown, different formulas should be used depending upon whether the variances of the different (sub) samples are equal or unequal (see for example Kanji (1993)). To test if homogeneity of variances can be assumed, we used Levene's test<sup>11</sup> where the null hypothesis ( $H_0$ ) is that the variances in the two groups are equal whereas the alternative hypothesis is that the variances are not equal (Field, 2000).

Also, since parts of the empirical analysis in this paper apply mean and standard deviation (or variance) for comparing different sub-samples, the coefficient of variance (= standard deviation as a ratio of the sample mean) is also useful as it provides additional information about the various sub-samples.<sup>12</sup> This is based on the notion that (sub-samples of) weaker teams will have lower budgeted revenues, on average, compared to (sub samples of) that of stronger teams (better performing teams). Thus, equal means and standard deviations (variances) are not expected across the different sub samples (different groups of teams). Non-parametric two-sample tests are conducted using the Wilcoxon-Mann-Whitney rank sum test of two populations by Kanji (1993), where we want "to test if two random samples could have come from two populations with the same mean" (p. 86).

Third, a simple regression analysis is used to investigate whether budgeted revenues are a significant driver of sporting success. This relationship will be analysed in Model I:  $y_i = b_0 + b_1x_i + u_i$ , where  $y_i$  is the final standing by team  $i$ ,  $x_i$  is the budgeted revenues by team  $i$ , and  $u_i$  is the error term, anticipated to satisfy the assumptions behind regression analysis.

Performance persistence is one of the three basic dimensions of competitive balance in a sports league (see, for example, Kringstad and Gerrard, 2007). A high level of performance persistence is an indication of weak competitive balance in a sports league, and is related to the possibility that performance in season  $t-1$  is an appropriate predictor of sporting performance in season  $t$ . Following Gerrard (2006), Model II includes this lagged variable, controlling for the persistency effect.<sup>13</sup> This gives Model II;  $y_i = b_0 + b_1x_i + b_3y_{i,t-1} + u_i$ .

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<sup>9</sup> Hall et al. (2002) argue for using win percentage instead of ranking (final league standing).

<sup>10</sup> Note that Groot (2008) argues for Kendall's tau in the context of competitive balance.

<sup>11</sup> For a definition of Levene's test statistic, see for example Brown and Forsythe (1974).

<sup>12</sup> It has already been mentioned that the team ending as number three in the league may be seen as an outlier when it comes to budget, something that will affect both mean and variance in the given sample.

<sup>13</sup> The promoted teams are taken into account by giving them a lagged rank equal to the rank of the relegated teams from season  $t-1$ , and the internal rank between these promoted teams reflects the rank difference in the second level division in season  $t-1$ .

The models above have an ordinary dependent variable reflecting the final standing rank. However, this is not the advice given in Hall et al. (2002, p. 152), claiming that “winning percentages are a more accurate measure of success than rank of winning percentages because a team with the season’s highest winning percentage will generally be deemed more successful if it achieved this with a .65 rather than a .60 record“. Thus, this is accounted for in model III. However, to ensure compatibility with final league standing, we use point percentages (pp) rather than winning percentages.<sup>14</sup> Thus Model III is the point percentage version of Model I;  $pp_i = b_0 + b_1x_i + u_i$ .

#### Panel data methods (*preliminary*)

Dummy variable regression, which is the same as a fixed effect model (Wooldridge, 2009):

$y_{it} = b_0 + b_1x_{it} + D_i + u_{it}$ , where  $D_i$  is dummy variable for team<sub>*i*</sub>. The time effect is captured by the subscript *t* (i.e. 2011, 2012 and 2013 season).  $x_{it}$  is the relative deviation from average budget in season *t*, taking into account possible inflation effects.

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<sup>14</sup> Since it is difficult to rewrite the models with lagged dependent variable into point percentages models, because of the promoted teams, we only modify model I and II into point percentages for the dependent variable.

## Data

The budgeted revenues among the teams in the Norwegian top division in football were collected from a newspaper article and are based on the standard used at the Norwegian football association (NFF). In this respect, all teams are obliged to report their finances to the association. Thus, the budgeted revenues are valid.

### *Descriptive statistics*

Table 1: Final league standing and budgeted revenues

Team	Final league standing			Budgeted revenues (mill NOK)		
	2011	2012	2013	2011	2012	2013
Molde	1	1		78	90	99
Strømsgodset	8	2		55	55	64
Rosenborg	3	3		205	195	195
Tromsø	2	4		72	65	67
Viking	11	5		100	109	99
Brann	4	6		110	110	110
Haugesund	6	7		45	49	57
Vålerenga	7	8		125	117	107
Lillestrøm	13	9		55	90	90
Odd Grenland	5	10		68	61	57
Aalesund	9	11		73	74	70
Sogndal	14	12		25	26	29
Hønefoss BK		13			42	42
Sandnes Ulf		14			38	37
Fredrikstad	12	15		60	60	
Stabæk	10	16		70	34	
Start	15			60		60
Sarpsborg08	16			20		30
Average				76.31	75.94	75.81
Standard deviation				43.96	42.52	41.45
Minimum				20.00	26.00	29.00
Maximum				205.00	195.00	195.00
Range				185.00	169.00	166.00
Gini coefficient				0.28	0.28	0.27
Observations, n				16	16	16

Sources: Dagens Næringsliv (January 11, 2012; February 4, 2013; February 22, 2013)

The average budgeted revenues for the 2012 season were NOK 75.94 million. It is also worth noting the relatively large standard deviation (42.52). This is attributable to the observed range of 169, which is the difference between the highest budget of NOK 195 million and the lowest budget of NOK 26 million. Both the range itself and the standard deviation indicate that there are differences in financial strength in the Norwegian top division. However, the Gini coefficient provides a more accurate picture of the distribution of financial strength. Drawing on the budgeted revenues for the teams in the Norwegian top division, we find that the Gini coefficient is equal to .28. This is illustrated in Figure 2, where the Gini coefficient

represents the area between the 45-degree line and the curve (also referred to as the Lorenz curve). In general, the larger the area between the 45-degree line and the curve is, the more unequal is the distribution of revenues.

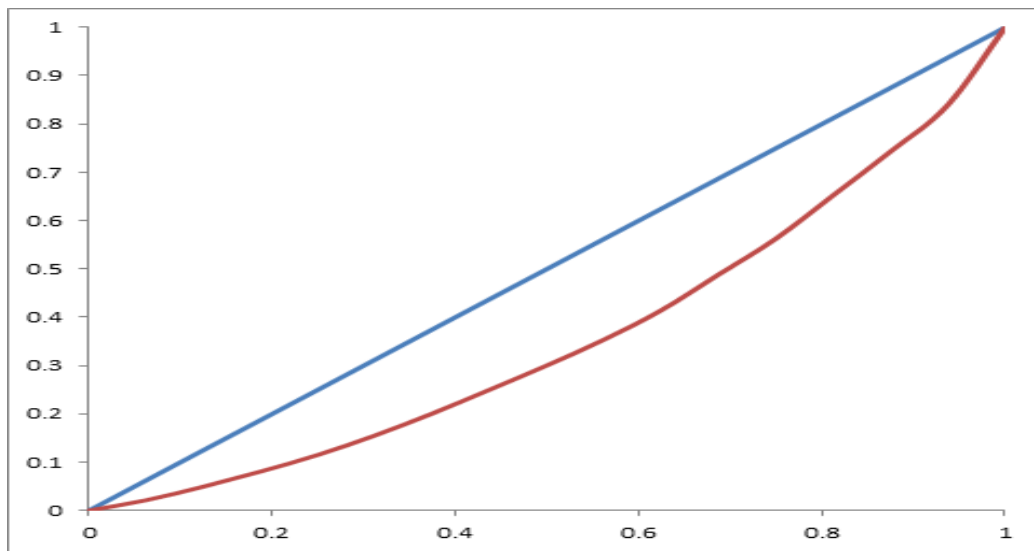


Figure 2: Illustration of the Gini coefficient on budgeted revenues for the Norwegian top division in 2012

Interestingly, the Gini coefficient for the Norwegian top division is higher than for both “payroll imbalance” and “revenue imbalance” in all North American major leagues (Fort, 2011). In turn, these results indicate more financial inequality in Norwegian football compared to the major league. On the other hand, in the English FA Premier League our calculations show the Gini coefficient on reported wage distribution from Deloitte (2012) to be between .30 and .35 based on the rank for the 2011/12 season and wages for the season before. The former is based on the teams participating both seasons, while the latter also includes the promoted teams (with wages from the second level division).

## Results

Looking at the relationship between final league standing and budgeted revenues in Table 1, it is tempting to reach the same conclusion as in the newspaper article. However, the Gini coefficient indicated financial inequality. Moreover, the Gini coefficient is a useful starting point as financial inequality to a large extent is a driver for final league standing. In turn, this prompted us to undertake additional tests to examine the relationship between budget and final league standing in more detail. Thus, a simple regression model using budget as the independent variable and final standing as the dependent variable was employed, and is illustrated in the graph below. It is noteworthy to observe that R-square for the 2012 season is quite high (.33) compared to similar relationships in other leagues (see, for example, Szymanski and Kuypers, 1999, and Hall et al., 2002). The simple regression model gives strong indications of a negative association between budgeted revenues and final league standing.

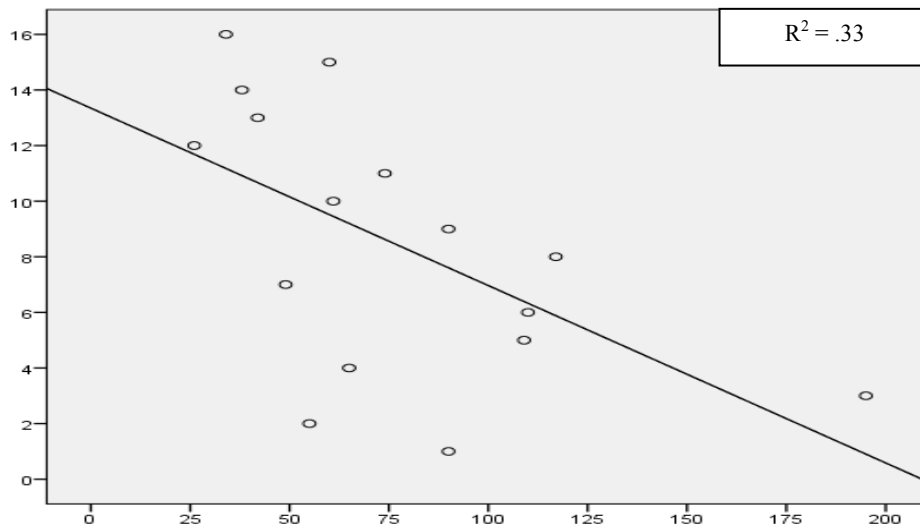


Figure 3: The relationship between final league standing and budgeted revenues

The Pearson correlation coefficient between budgeted revenues and final standing is  $-.55$  ( $p < .05$ ) and  $-.57$  ( $p < .05$ ) respectively for the 2011 and 2012 season. For the two seasons combined, the Pearson correlation coefficient is  $-.56$  ( $p < .05$ ). The sign of the correlation coefficient is negative as expected. In turn, this implies that increasing the budget corresponds to a lower standing on the final league table. Put differently, increasing the budget is likely to be accompanied by a better sporting outcome. Moreover, this is interesting because it gives strong indications that the final standing is not irrespective of the budget prior to the season. The Spearman's rank correlation coefficient is  $-.61$  ( $p < .01$ ). Results are similar when applying point percentage (Model III) instead of ranking. Here, the Pearson correlation coefficient is  $.54$  ( $p < .05$ ). The association between budgeted revenues and point percentage is positive as increasing the budgeted revenues also will increase the point percentage obtained. These results are also confirmed in the different models of the regression analysis shown below:<sup>15</sup>

Table 2: Summary of models for the 2012 season (standard error in brackets)

$y_i = \text{standing}$	Model I	Model II	Model III
Constant	13.35*** (2.12)	5.77* (3.15)	0.34*** (0.06)
Budget	- 0.06** (0.03)	-0.03 (0.02)	0.002** (0.001)
Final standing previous season		0.59** (0.21)	
$R^2$	.33	.59	.29
Observations	16	16	16

Significance (two-sided): \*  $p < .1$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$

Overall, Model I shows that budgeted revenues are a significant ( $p < .05$ ) driver of the final league standing in Norwegian football for the 2012 season, consistent with the literature. In

<sup>15</sup> The assumptions underlying regression were given serious consideration. However, special emphasis was placed on multicollinearity. VIF indexes only indicated potential problems related to model II. This is, however, somewhat expected.

Model II, we have added the final league standing obtained in the previous season to Model I. When this is done, budgeted revenues are no longer a significant driver of the final league standing. Final league standing previous season is, however, highly significant ( $p < .05$ ).<sup>16</sup> The explanatory power of the model is remarkably high compared to Model I. Using a different measure of sporting success, namely point percentage, as in Model III, yields results that are in line with those of Model I.

So far, the analysis drawing on correlation coefficients and the regression analysis suggest that the higher the relative level of budgeted revenues is, the better final league standing is expected. Even though this is consistent with previous literature, it is contradictory to the main conclusions drawn in the newspaper article referred to earlier. This focus (disagreement) can be explained by the fact that “larger” teams were beaten by “smaller” teams. To illustrate, the budget of team number 1, 2 and 4 combined was only about 7.7 % higher than the budget for the third ranked team alone.

Due to the inconsistency between the newspaper article and the results above, a deeper analysis is conducted by splitting the sample into different sub-samples. Because the league consists of 16 teams it can easily be divided into, for example, four quartiles (4 teams each) and two halves (8 teams each). Mean budgeted revenues and standard deviation for each quartile (based on the final league standing) are presented below (mean and standard deviation are based on millions of NOK):

Table 3: Summary statistics for quartiles 2011 season

	<i>Quartile 1</i>	<i>Quartile 2</i>	<i>Quartile 3</i>	<i>Quartile 4</i>
Mean budgeted revenues	116.25	73.25	75.75	40.00
Standard deviation	61.47	35.76	17.10	20.41
Coefficient of variation	0.53	0.49	0.23	0.51

Table 4: Summary statistics for quartiles 2012 season

	<i>Quartile 1</i>	<i>Quartile 2</i>	<i>Quartile 3</i>	<i>Quartile 4</i>
Mean budgeted revenues	101.25	96.25	62.75	43.50
Standard deviation	64.21	31.70	27.22	11.47
Coefficient of variation	0.63	0.33	0.43	0.26

Table 5: Summary statistics for quartiles 2011 and 2012 aggregated

	<i>Quartile 1</i>	<i>Quartile 2</i>	<i>Quartile 3</i>	<i>Quartile 4</i>
Mean budgeted revenues	108.75	84.75	69.25	41.75
Standard deviation	58.74	33.61	22.16	15.44
Coefficient of variation	0.54	0.40	0.32	0.37

Although it is acknowledged that the low number of observations within each quartile can be problematic when it comes to investigating whether differences between quartiles are significant, we have run t-tests along with the non-parametric Wilcoxon-Mann-Whitney rank sum test of two populations. Table 4 shows that when moving from Q1 to Q4, mean budgeted revenues are decreasing. Moreover, the analysis indicates that the only statistically significant differences are found between Q1 and Q4 ( $p < .10$ ), Q2 and Q3 ( $p < .10$ ), and finally, Q2 and Q4 ( $p < .05$ ). Although mean differences are large in relative terms between Q1 and respectively Q3 and Q4, the difficulty in obtaining significant findings is nonetheless not

<sup>16</sup>  $p = .0102$



unexpected statistically speaking. This can to a large extent be attributed to the small sample sizes and the subsequently large standard deviations (also observable by the coefficient of variation (.63)).

One interesting feature of Tables 3-5 is that there are indications of relatively weak sporting performance amongst the small budget teams. This is based on the notion of the low mean budgeted revenues along with the relatively low standard deviation found in Q4 as compared to the other quartiles. This is also evident for the 2012 season, as only three teams in the first three quartiles had lower budgeted revenues than the corresponding budgeted revenues found in Q4. Consequently, this may indicate that teams having small budgeted revenues are also more likely to attain a weaker final league standing. In addition, there are indications suggesting that teams with the highest budgeted revenues are also among the top-half teams (top 8 of the final league standing). Interestingly, this was also confirmed when testing the top half against the bottom half, as shown in Table 6 below:

Table 6: Summary statistics for different sub samples 2011 season

	<i>Top half</i>	<i>Bottom half</i>	<i>Q1</i>	<i>Q2-Q4</i>
Mean budgeted revenues	94.75	57.88	116.25	63.00
Standard deviation	51.92	25.86	61.47	28.84
Coefficient of variation	0.55	0.45	0.53	0.46
Difference in mean budget	36.88**		53.25**	

Significance (one-sided): \*\* p < .05

Table 7: Summary statistics for different sub samples 2012 season

	<i>Top half</i>	<i>Bottom half</i>	<i>Q1</i>	<i>Q2-Q4</i>
Mean budgeted revenues	98.75	53.13	101.25	67.50
Standard deviation	46.96	21.91	64.21	32.10
Coefficient of variation	0.48	0.41	0.63	0.48
Difference in mean budget	45.62**		33.75	

Significance (one-sided): \*\* p < .05

Table 8: Summary statistics for different sub samples 2011 and 2012 combined

	<i>Top half</i>	<i>Bottom half</i>	<i>Q1</i>	<i>Q2-Q4</i>
Mean budgeted revenues	96.75	55.50	108.75	65.25
Standard deviation	47.87	23.28	58.74	29.93
Coefficient of variation	0.49	0.42	0.54	0.46
Difference in mean budget	41.25***		43.50***	

Significance (one-sided): \*\*\* p < .01

For the 2012 season (Table 7), the budgeted revenues for the teams in the top half are on average close to 86 % higher than for the teams in the bottom half. This difference is also significant (p < .05). It is also worth noting that there is no evidence in favour of any differences between Q1 and the three other quartiles combined. Again, note the relatively high standard deviation in Q1 (also observable by the coefficient of variation). Thus, it seems as if there are two different properties inherent to the association between budgeted revenues and final league standing. First, it seems as though this association is of a random character for the top half. This can help explain the rationale behind the claims set forth in the Norwegian newspaper article. Secondly, and perhaps more interestingly, there seems to be a marked difference in this association when it comes to the top half and the bottom half. To further investigate this, the correlation between budget and sporting performance, measured

as: i) final standing and ii) point percentage, is analysed for both the top half and the bottom half. To obtain an even more nuanced picture, the top 4 and bottom 12 are also included. Results are presented in Table 9.

Table 9: Pearson correlation coefficient and SRCC for association between budgeted revenues and final league standing for top 4, top 8, bottom 8 & bottom 12 (2012 season)

Correlation coefficient	Budgeted revenues, Pearson's r		Budgeted revenues, SRCC	
	Final league standing	Point percentages	Final league standing	Point percentages
Top 4	.13	.00	.00	.00
Top 8	-.03	.07	.14	-.18
Bottom 8	-.65**	.59*	-.67**	.65**
Bottom 12	-.75***	.69***	-.73***	.71***

Significance (one-sided): \* p < .1; \*\* p < .05; \*\*\* p < .01

Based on the above discussion, the lack of association in top 4 (equivalent to Q1) and top 8 (equivalent to top half) in Table 9 comes as no surprise. This is confirmatory of earlier findings. Further, when analysing relative budget on the basis of rank (SRCC), the sign is opposite of what was expected. However, for the bottom 8 the situation is very different as results show that there are significant associations between budgeted revenues and sporting success, as demonstrated by final league standing and point percentages. These are significant at the 5 % level in all cases but one. Results are even more remarkable for the bottom 12 as all correlation coefficients are significant at the 1 % level.

The fixed effects model (2011 and 2012) [*Will be expanded to three seasons*]. Model with final league standing:

Table 10: Fixed effects model with final league standing

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	21.2497	4.0640	5.229	0.000163	***
TeamBrann	0.5863	2.7609	0.212	0.835118	
TeamFredrikstad	1.4336	2.1303	0.673	0.512766	
TeamHaugesund	-7.5554	2.4356	-3.102	0.008414	**
TeamHønefoss BK	-1.8056	2.9526	-0.612	0.551404	
TeamLillestrøm	0.8534	2.0129	0.424	0.678533	
TeamMolde	-7.3909	2.0846	-3.545	0.003588	**
TeamOdd Grenland	-3.8790	2.0656	-1.878	0.083014	.
TeamRosenborg	12.3594	6.8531	1.803	0.094529	.
TeamSandnes Ulf	-1.4193	3.0719	-0.462	0.651699	
TeamSarpsborg	-2.1962	3.7103	-0.592	0.564060	
TeamSogndal	-4.3466	3.1984	-1.359	0.197252	
TeamStabæk	-0.2977	2.3009	-0.129	0.899052	
TeamStart	2.9110	2.5639	1.135	0.276719	
TeamStrømsgodset	-7.8317	2.2288	-3.514	0.003811	**
TeamTromsø	-7.7668	2.0289	-3.828	0.002093	**
TeamVålerenga	4.7684	3.1778	1.501	0.157370	
TeamViking	2.7462	2.5746	1.067	0.305539	
RelBud	-11.6512	3.9427	-2.955	0.011161	*

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.012 on 13 degrees of freedom

Multiple R-squared: 0.9226, Adjusted R-squared: 0.8154

F-statistic: 8.608 on 18 and 13 DF, p-value: 0.0001528

The fixed effects model (2011 and 2012) [Will be expanded to three seasons]. Model with point percentage:

Table 11: Fixed effects model with point percentage

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.13224	0.11408	1.159	0.26723
TeamBrann	-0.10779	0.07750	-1.391	0.18764
TeamFredrikstad	-0.02497	0.05980	-0.417	0.68314
TeamHaugesund	0.15899	0.06837	2.325	0.03688 *
TeamHønefoss BK	0.05240	0.08288	0.632	0.53819
TeamLillestrøm	-0.04030	0.05650	-0.713	0.48829
TeamMolde	0.17122	0.05852	2.926	0.01181 *
TeamOdd Grenland	0.07228	0.05799	1.247	0.23454
TeamRosenborg	-0.41904	0.19238	-2.178	0.04839 *
TeamSandnes Ulf	0.05863	0.08623	0.680	0.50851
TeamSarpsborg	0.01484	0.10415	0.142	0.88888
TeamSogndal	0.13529	0.08978	1.507	0.15576
TeamStabæk	-0.04574	0.06459	-0.708	0.49131
TeamStart	-0.10210	0.07197	-1.419	0.17952
TeamStrømsgodset	0.20221	0.06256	3.232	0.00655 **
TeamTromsø	0.13832	0.05695	2.429	0.03040 *
TeamVålerenga	-0.16641	0.08921	-1.865	0.08484 .
TeamViking	-0.10628	0.07227	-1.471	0.16519
RelBud	0.32910	0.11068	2.974	0.01077 *

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.05649 on 13 degrees of freedom

Multiple R-squared: 0.9016, Adjusted R-squared: 0.7653

F-statistic: 6.616 on 18 and 13 DF, p-value: 0.000623

## Conclusions and discussions

The analysis based on budgeted revenues and sporting performance, measured by the final league standing in the top division of the Norwegian football league for the 2012 season, provides a number of interesting results. Despite the claims set forth in the Norwegian newspaper article, we found a statistically significant correlation between budgeted revenues and sporting performance. The simple regression model also confirmed this association as the adjusted  $R^2$  was equal to .28 and relatively high compared to other studies (e.g., Szymanski and Kuypers, 1999). Put differently, budgeted pre-season revenues are a significant predictor for sporting success. This holds for regression models using both final league standing and point percentage to measure sporting success. Moreover, this is also in line with the reported Gini coefficient (.28) for the dispersion of budgeted revenues. Additional support is also provided when dividing the table in two halves as the average budgeted revenues in the top half are significantly higher compared to the average budgeted revenues in the bottom half. However, equally important, within the two halves patterns are quite different. While the correlation between budgeted revenues and performance is significant for the bottom half, this was not the case in the top half. To illustrate, three of the bottom four teams were also the ones having the smallest budgeted revenues. This duality prompted us to undertake further analysis by drawing on quartiles. However, findings were somewhat inconsistent, an issue that can be partly attributed to the large standard deviations, in particular in quartile 1. In this respect, the only highly significant difference in mean budgeted revenues was found when comparing Q2 and Q4. That being said, the differences between Q1 and Q4 as well as Q2 and Q3, were both significant at the 10 % level.

Due to the difficulties related to quartile 1 (e.g., relatively high standard deviation) we investigated the correlation between budgeted revenues and final league standing in detail using the Pearson correlation coefficient as well as Spearman's rank correlation coefficient. For the top 4 (equivalent to quartile 1), no significant correlations were found. Results were, not surprisingly, similar for the top 8. For the bottom 8, however, we found a significant correlation. Even more important, when looking at the bottom 12, results were highly significant and in all cases significant at the 1 % level. These results hold for both final league standing and point percentage.

To summarize, for the 2012 season of the Norwegian football league, the pre-season budgeted revenues were a significant predictor for the final standing. However, the pre-season revenue budget had both predicting and non-predicting elements for the final league standing. This duality was evident throughout the paper, and mirrors the main conclusion in that although no association was found in the top half, budgeted revenues seem to be a key driver in reducing the risk of ending in the bottom 4. Moreover, it seems reasonable to claim that elements beyond an acceptable level of budgeted revenues play a more prominent role in relative terms. Interestingly, this may indicate that the Norwegian top division for the 2012 season had room for playing "Moneyball".

As for the limitations of this study, caution should be taken in generalizing the results as they are based only on one season (*but is now expanded*). Analysing a single season in professional team sports involves a high degree of uncertainty and randomness that may affect the final league standing. Examples of relevance are coincidences in matches of high significance (Jennett, 1984), injuries and performance of important players, and financial abilities to take advantage of transfer windows, to mention just a few.

Therefore, it can be of interest to conduct further research to see if the pattern from the 2012 season can be reflected on a more general basis. Hence, there is a call for studies covering several seasons, or alternatively including additional leagues. In addition, a deeper analysis of the financial side is warranted. Here, differences such as strategies on the player market and consequences of owning a stadium compared to renting a stadium are important.

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Paper for *Management accounting and control – the diversity and opportunities in research and research methods* workshop: **“Everything old is new again” - Russian government budgeting reform initiative and its implementation in Leningradskaya oblast` county**

### **Abstract**

*The proposed research has to be a significant part of the research project, devoted to budgeting reforms in Russia: “Local government budgeting reforms in Russia: implications and tensions” (NORRUS project), placed at the High North Center and Bodø Graduate School of Business at University of Nordland (Norway). The idea of this particular piece of research is to investigate how Russian central government performance budgeting and program budgeting initiatives were translated from the federal level to Leningradskaya oblast` county level since the very beginning of their implementation in 2004 until today (end of 2013) within “travel of ideas” (Czarniawska and Sevón, 2005; Sahlin-Andersson and Sevón, 2002; Sahlin-Andersson, 2001, Czarniawska and Joerges, 1996) theoretical perspective using “norms-practice-use” (Mellempvik and Olson, 1996) methodological framework.*

### **Motivation and literature review**

Doing research on Russian public finance, especially on government accounting and budgeting is a very inspiring job for business researcher, first of all because the topic of state and its reconstruction has been attracting increasing attention among practitioners and academia in the world for the last three decades, what is referred to as New Public Management international trend (Timoshenko, 2008) and second, as during recent 10 years public finance have played and play more and more important role in Russian economy both through partially or fully state-owned companies, state corporations and budget (public) enterprises and through pure budget expenses on federal and regional levels meaning state investment programs and public services. The issues of decision-making, accounting norms and practices, relation between economic growth, development of local national and international business and state budget are widely discussed, but still there are a lot of blind spots to investigate on the map of Russian public finance and many interesting cases to study.

If we make a brief literature review about changes in regional public finance in post-Soviet Russia apart from some relevant publications in Russian language, which definitely can be helpful for research in Russian context, we find again mostly Russian authors or joint publications dating from the end of 90-s to 2013 that include both quantitative and qualitative research with accents on economical, political, financial and geographical aspects of transition, centralization and decentralization, tax revenue redistribution, “marketization”, international and interregional connection-building.

Perhaps one of the most detailed and at the same time broad qualitative research on local government accounting in Russia with time range from 18<sup>th</sup> century to the beginning of 2000`s was made by Anatoli L. Bourmistrov in his doctoral thesis (2001), where using norms-practice-use framework, adopted from Mellempvik and Olsen (1996), author brings three perspectives of the study: historical, technical and users perspective, having taken *Leningradskaya oblast` county* – one of the border regions in the North-



West of Russia as an object for research. Several articles by Anatoli L. Bourmistrov, some of them joint with Frode Mellempvik anticipate or develop findings of the thesis. One of them (Bourmistrov & Mellempvik, 1999) explores changes in accounting norms during first decade of transition from Soviet planned economy into market-oriented that were partially influenced by political reforms, nowadays associated with political freedoms as well as decentralization and increasing local autonomy, and investigate how these has influenced local practices in *Leningradskaya oblast`* county. Another comparative study (Bourmistrov & Mellempvik, 2002) explores connections and tensions between the realities portrayed in the accounting systems and the governance structures in local governments in mentioned *Leningradskaya oblast`* county and Nordland county (Norway), trying to figure out interrelations between accounting and democratic governance in two different contexts. Several qualitative researches are devoted to Russian public sector reform started in 2004 seeing accounting as social and institutional practice (Timoshenko, 2008, Timoshenko and Adhikari, 2009) touching such initiatives as management by results (Russian concept, internationally known as performance budgeting) and analyzing the attempts of state administration to implement IPSAS and shift from cash accounting to accrual accounting. One of the latest papers of this kind finds out decoupling between public sector accounting practices and declared accounting norms in Russian central government and states that although the ideas of increasing efficiency, transparency as well as accrual accounting ideology fits well Russian top political context of legitimization of Russian state on the international arena, it comes into strong contradiction with Russian accounting tradition (Antipova & Bourmistrov, 2013).

There are several studies on regional projection of changes made during 90-s covering not one or several regions but more or less the whole territory of Russian Federation, of those we can mention investigation of degree of financial independence of cities from regional governments and the resulting incentives for these cities to provide public goods (Alexeev and Kurlyandskaya, 2003) made using a set of data on the budgets of 35 large Russian cities in 29 regions for the 1992 to 1997 period, where authors claim that transfers from a higher-level government budget may affect the incentives of lower-level governments to foster their tax base. The next paper (Desai, Freinkman, Goldberg, 2005) analyze fiscal data from 80 Russian regions from 1996 to 1999 and argues that unearned income streams, particularly in the form of revenues from natural resource production or from budgetary transfers from the central government transform regions dependent on these income sources into reinter regions. Another research is devoted to municipal perspective of public finance in Russia present three case studies (Mitchnek, 2007): Yaroslavl', a provincial capital in central Russia, *Leninskii* district (later merged with *Centralny* district into *Admiralteyskiy* district) and Petrodvorets - a satellite town, both within St. Petersburg, trying to answer several questions around centralization and decentralization of public finance. There are also interesting reflections on equalization policy, conducted by authorities since mid 90-s to mid 00-s (Martinez-Vazquez and Timofeev, 2008), claiming that national equalization policies often are concerned with the quality and accessibility of services delivered at the lowest (or local) level of government, with examination of fiscal equalization outcomes for about 2000 Russian local governments (*municipalities*) in 72 regions (*subjects of Russian Federation*) to assess and explain the extent of equalization differences between and within regions. One of the latest articles by Vladimir Gel'man (2012) presents an analysis of "informal institutionalization" in post-Communist Russia in theoretical and comparative perspective to enhance understanding of negative effects of subversive informal institutions on informal governance.

Not surprisingly most significant publications devoted to Russian public finance as well as the recent ones either explore historical perspective and concentrate on changes within after-Soviet period linking

them to political agenda, or investigate the recent public sector reform outcomes on the central (federal) level. However, there seems to be a lack of qualitative research on changes or reforms in governmental accounting made on regional level within last 4 or 5 years (after 2009) while during that period Ministry of Finance of Russia continued its attempts to modernize public finance, as some experts say, according to Western models within New Public Management guidelines (Romanov, 2008, Timoshenko, 2009) on regional and local levels. Although these changes mostly influenced state-owned enterprises (public entities), such as universities and research institutions, compulsory education system (schools and colleges) and kindergartens, state healthcare sector and other public organizations, there were remarkable systematic changes in legislation with accent on regional budgeting, including regional perspective of mentioned above management by results or performance budgeting and program budgeting initiatives. And maybe one of the most interesting to study, are quite narrow, even surgical initiatives that were made by federal authorities within mitigation of 2008-2009 financial crisis negative impact on regional budgets using both traditional and newly-established financial instruments.

Therefore, the preliminary research questions for my research will concentrate on: what are the roles of Russian central and regional authorities in framing and implementing budgeting reforms on regional level, what are the links of these reform initiatives to international trends and what consequences they bring for local welfare production.

### **Theoretical framework and methodology**

General theoretical framework for my research will further develop the argumentation in a line that accounting is considered as an organizational practice assisting local actors to manage local economy and welfare production, meaning that budget provides finances and an important element in democratic governance where the wishes of individuals (e.g. electorate) as well as resources are meant to be converted into collective action by discovering and implementing policy coalitions (March & Olsen, 1995). In local governments, local politicians discuss the decisions on budget allocations, which local administrations put in practice. Therefore changes in local budgeting practices can have impact on local governance and welfare production.

Changes in budgeting practices are widely investigated through reform approach meaning by it rational top-down implementation of norms and building local practices on centrally developed guidelines. In this research I want to study the implementation of performance budgeting and program budgeting in *Leningradskaya oblast* regional government through conceptualization of organizational change as "travel of ideas", i.e. change as a sequential step-by-step process of objectifying and transfer of ideas from their time and place of origin and its materialization passing through a sieve of local legitimation (Czarniawska and Sevón, 2005; Sahlin-Andersson and Sevón, 2002; Sahlin-Andersson, 2001, Czarniawska and Joerges, 1996). In this sense links between international public sector reform ideologies, their perception on federal government level and appearance on regional level can be seen as materialization of reform ideas through translation, indicating that the outcome of the reform may be surprisingly different that was planned on the initial stage. In this sense the importance of local context in reinventing the reform pattern should not be underestimated (Czarniawska and Joerges, 1996; Gherardi and Jacobsson, 2000).

The mentioned research questions and proposed theoretical framework demand appropriate methodology, by which I consider norms-practice-use framework, rooted in the institutional approach to social systems consisting of systems norms and systems of action (Bergevärn *et al.*, 1995) with the system of action brought up by Mellemvik and Olson (1996) into system of practice and system of use.

Main data collection methods for normative research will be documentary analysis with open, semi-structured and in-depth interviews. Budget and Tax law books, Ministry of Finance, Ministry of Economic Development and Ministry of Regional Development guidelines as well as regional legislation will help me to perform this task. To study the practices of budget process I would like to make a case-study of implementation of performance budgeting and program budgeting initiatives in *Leningradskaya oblast* county within time range from 2004 to 2014. Analytic reports, articles and other official and media resources will be analyzed to study how, by whom and in what way the mentioned changes are perceived by users as well as probable interviews with politicians from regional parliament will be taken.

### **Assumptions, findings and conclusions**

Keeping in line with Nordic management and business administration research tradition, known as empirical and qualitative, being theoretically rooted in organizational theories (Pettersen et al, 2002), we find an investigation of the sequence of budgeting reforms in Sweden (Czarniawska-Joerges and Jacobsson, 1989) that reminds me much of situation in Russia for recent 10 years and concludes again that there is a crucial importance in relating budgeting to the context surrounding it. Considering geographical, economic and financial diversities of Russian regions, complexity of relationships between Russian federal authorities and regional governments, I can assume that, being translated several times the ideas of effectiveness, efficiency and accountability of central government initiatives, recognized as being addressed to New Public Management ideology, could have been perceived differently, while being institutionalized in regional governments, than just legitimacy-biased, as it seem to happen on federal level (Timoshenko, 2009). Thus these ideas could serve as enhancing instrumentality for local users, constructing a space for creativity and leading to organizational innovations inside regional financial departments, and therefore bringing more fruitful results for the purposes of local welfare building and business development. As a brief example of this I would like to mention 2004 "The regional finance reform program" made by Leningradskaya oblast' financial authorities and published as initial point of regional budgeting reform where instead of literal addressing the central government rhetoric, much accent is made on the perspectives of implementing Balanced Scorecard system to manage regional finance following "successful experience of USA and Finland" (The regional finance reform program of Leningradskaya oblast', 2004). Although further legislation and program documents are made strictly within normative guidelines provided by Russian Ministry of Finance, this example of creativity looks quite inspiring. *Since the early stage of research, some further findings and conclusions will be presented on the workshop.*

### **Validity, accessibility, gender and ethical issues**

There is a challenge that has to be mentioned while making research on Leningradskaya oblast` region, which has the population close to 1,8 mln., gross regional product of 504 billion rubles (12,6 billion Euros, 2010) and annual budget of 58 billion rubles (1,45 billion Euros, 2012). On one hand, it has been an object for research by Anatoli Bourmistrov (1999, 2001, 2002), so a good comparative study can be made, and on the other hand, there is high probability of merging it within the next 2 years with Saint-Petersburg, a city of federal jurisdiction, that has 3 times bigger population, more than 3 times bigger gross regional product and 6 times bigger budget, and that can make data collection more complicated as well as several validity challenges can arise. But as a general remark I would like to say that I do not expect much troubles with validity in my research as most of public funds according to Russian legislation have to be transparent and all procedures of their collecting and spending are strictly regulated by guidelines on all levels.

Gender issues will be considered while planning the interviews and ethic questions will be addressed as well because as I see the core meaning of such kind of research for society besides knowledge building is to make the work of state authorities more transparent and close to public that corresponds to my understanding of my mission as a researcher.

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# Change of MCSs in SCM through the lenses of Actor-network: the context of mining industries in the Russian High North

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## Abstract

The paper discusses about changes of control mechanisms in supply chain settings within the network of inter-organizational relationships (IORs) in the light of actor-network approach. Control mechanisms are like a mediator in building links between entities within the network. Also supply chain management (SCM) integrates all businesses processes, links them and thereby accumulates interdependencies around its activity. In this paper we imagine SCM as a network of interdependences in IORs which aligns different heterogeneous elements where management control systems (MCSs) can act as certain “actors” who are active and innovative in developing a particular knowledge and technology.

Using the qualitative approach the paper is based on case study of a horizontal network including two mining industries and a shipping company located in the Russian High North. The paper focuses on how changes of MCSs in SCM of one mining industry within the network can affect organizational actions of other heterogeneous elements (or industries), especially if a new actor, either a new control mechanism or a new technology in cargo transportation, is embedded into the network. Also there is a special attention to the interdependence of one mining industry on organizational actions of another one aligned into the same network.

## Keywords

MCS, SCM, Actor-Network, Inter-organizational relationships.

*“Change has been with us forever, and it always will be,  
but the idea of change itself is changing”*

Abrahamson (2000, p.79)

*“Where the road ends, Northern realities begin”*

Joël Plouffe (2010, p.12)

## 1. Introduction

Both quotes above are used to anticipate the research idea and context. The research raises issues in the design and use of management control systems (MCSs) in supply chain settings in the perspective of inter-organizational relationships (IOR).

At the heart of the research there have been put change processes of control mechanisms and technologies involved in the development of supply chains in the High North over time.

According to Mouritsen (2005) “a MCS is never stable and tends to get new functionality as time goes because it is thrown into new situations and episodes” as well as changes in MCSs “constantly incur change to organizational action”. Being encouraged by this idea, we endeavour to undertake a promising journey into management control (MC) change processes through the lenses of Actor-network theory (ANT) with a focus on the interpretations of control changes in the transportation operations and supply chain design of mining industries in the Russian High North, especially located in remote areas with sparse transportation systems.

## **1.1. Problem Statement.**

While management accounting has been an instrument for reporting to the government and tax authorities in most parts of the Western world where the role of accountants has changed (Moilanen, 2008; Burns&Scapens, 2000; Loft, 1986; Tomkins & Groves, 1983), the design and use of accounting differs somewhat in the former Soviet Union (Moilanen, 2008) and has still been different in the Russian contemporary economic practice after reforms of 1990s (Bourmistrov, 2001; Timoshenko, 2006; Panteleeva, 2013). Transformations in the Russian political system and economic reforms of 1990s significantly affected the Russian institutional environment (Polterovich, 1999; Bourmistrov, 2001), social ideology (Bourmistrov, 2001) and, therefore, changed Russian public sector accounting (Timoshenko & Adhikari, 2009) as well as accounting norms in organizations with the enactment of new obligatory accounting procedures on organizational activities (Bourmistrov, 2001; Shleifer & Treisman, 2005). Control objectives on information demand and resource flows also underwent reorientation (Polterovich, 1999).

Foremost the reforms of 1990s were marked with a huge economic decline in production and crisis (Shleifer & Treisman, 2005, Granberg, 1997). Due to the territory of Russia has been unevenly developed the economic crisis especially affected remote areas in the High North and Siberia with weak administrative management and tendency to rapid degradation (Utkin & Denisov, 2001) or “the regions along the Northern Sea Route (NSR)” (Granberg, 1997). Industrial enterprises, ice-breaking fleet, ports got into a hard financial situation due to price liberalization and change in the credit system (Granberg, 1997). Extractive and metallurgical industries operated in the High North drastically reduced their operations since the dissolution of the Soviet Union because of the general economic downturn in domestic market and the sharp fall in defense industry production which was a major consumer of ferrous and non-ferrous metals (Levine, 1999; Granberg, 1997). Material and technical supply from other regions was interrupted. Commercial navigation on the Northern Sea Route also went into decline, and tariffs on sea shipment including ice-breaker assistance flared up due to the reduction of cargo volumes. Most of industrial enterprises located in remote High North areas with limited choice of supply chains found themselves virtually isolated and cut off from the Mainland (Granberg, 1997).

If during the Soviet period a powerful governmental resolutions released and enforced special procedures for the development of transport routes, the organization of material and technical supply to remote areas of the High North, as well as specific accounting routines and tax regulations for enterprises located in the areas inhabited by northern indigenous peoples (Resolution of the Cabinet of Ministers of the USSR, Council of Ministers of the RSFSR dated March 11, 1991 #84), that indicated stability and guaranteed security of uncertainty and risks, but then “in times of change” (Timoshenko & Adhikari, 2009) industries in remote areas were thrown into the harsh environment of new market conditions to overcome new realities of economic crisis without state support when they had to adapt only by their own efforts and resources (Granberg, 1997).

Also investment activity in the High North remote areas changed during 1990s. If earlier enormous investments were received from the state, then in 1995 the most volume supported by own means of enterprises and organizations (Granberg, 1997). In order to survive some extractive industries in the High North started to invest into developing own infrastructure to reestablish links with the mainland and to toughen control over their own transport flows, in spite of these investments were made in non-core assets.

In spite of mentioned above in an official document we find that just mining and metallurgical industries in contrast to other industries located in the Russian High North regions turned out resistant to economic crisis of 1990s and their activity provided relative stability for these northern areas due to they were “vertically integrated companies, worked on the so-called stationary markets and incorporated into long supply chains under control of their parent companies” (Annex to the Resolution of the Government of Murmansk region # 693-PP/15dated December 23, 2011).

To sum up mentioned above, control mechanisms in the Russian practice have undergone significant changes since the dissolution of the Soviet Union. These changes have been particularly

perceptible in the High North for industries located in remote areas with limited choice of supply chains, where logistics and regular transport connection with the Mainland really matter. Here, it is interesting to find out what control mechanisms have been applied by Arctic extractive and mining industries in order to compensate their bad remote location and organize the supply chain design in such a way to make their location more favourable and gain stable linkages with the market. Also it is not realized how the change processes of MCSs have influenced on the organization of transport links between remote areas in the High North or, quite the contrary, how specific characters of cargo transportation in Arctic harsh natural conditions through the ice fields have affected the design of MCSs in individual mining industries.

The challenges of Arctic extractive industries, mentioned above, are stimulating us to start this research.

### **1.2. Motivation to the research.**

The review of 101 articles prepared by Jeschonowski *et al.* (2009) and consecrated to the area of MCSs in logistics and SCM shows that theoretical and practical aspects of MC issues associated with supply chain settings are covered quite poorly and not enough in the literature for today. Jeschonowski *et al.* (2009) found that over the last 20 years (to be exact since 1988 till 2008) the number of such researchers grow quite slowly: intra-organizationally focused articles are just at 2.5 articles per year and inter-organizationally focused articles are at 5 articles per year. That gives a potential for our research about MCSs in SCM based on case study to penetrate into a practical use of MCSs in supply chain settings.

In turn, Burns and Scapens (2000) argue that most of existing researches attract attention to MC change as “an outcome” rather than try to explain how an organization’s MC “becomes what it is or is not over time, in other words MC change as “a process”.

Also one of the findings disclosed by Dechow & Mouritsen (2005) awakes our special interest in that while supply chain structure mostly remains “plastic” and can be changed at any stage of practice, the accounting structure is “plastic” only on the pre-practice stage. Subsequent corrections or retranslations in MC technologies are supposed to cause changes already in the organizational actions in order to make them visible (Dechow & Mouritsen, 2005).

All mentioned above has been motivating us to proceed to the study of change processes of MCSs in SCM.

The paper purpose is to develop the knowledge about *How? MCSs in SCM can change and affect organizational actions within the network in the context of mining industries located in the Russian High North.*

The focus is on the change processes of MCSs in SCM in order to attempt to make a contribution to theoretical development about the nature and character of MC change in local contexts.

The research purpose is assumed to be reached through providing insights into the following research questions:

– What kinds of MC tools in SCM have been applied by extractive and mining industries in the Russian High North?

– How do MCSs act among mining industries involved in the network of inter-organizational relationships in the Russian High North?

– How does the change of MCSs in SCM unfold and affect organizational actions of mining industries in the Russian High North?

## **2. Theoretical perspective**

### **2.1. Management control systems (MCSs) in IOR**

The research literature is replete with a variety of definitions and descriptions about what a MCS is. However, they are either complementary or quite different from each other, and encompass



quite broad conceptions (Malmi & Brown, 2008; Fisher, 1998) expanding the notion of a MCS to strategic development or narrowing down to employees' behavior (Malmi & Brown, 2008; Otley, 1999).

In this paper we perceive a MCS in SCM as an “actor” or an active force helping to mediate, shape and construct inter-organizational relationships (Mouritsen&Thrane, 2006) and also the boundaries of networks (Kraus and Lind, 2007; Mouritsen *et al.*, 2001) integrating networks through information flows. So, we view a MCS in SCM as an integrating mechanism which assists in the establishment and development of inter-organizational relationships and affects all relevant interests of other “actors” both human and non-human including other organizations within the network (Mouritsen *et al.*, 2001; Mouritsen&Thrane, 2006; Kraus and Lind, 2007).

## **2.2. Supply chain management (SCM) and interaction with MCSs**

“MCSs do not operate in isolation” (Malmi & Brown, 2008, p. 287) and we study MCSs in SCM.

SCM as a scientific phenomenon is relatively new in the literature (Cooper *et al.*, 1997) and characterizes by the presence of different research paradigms, the diversity of objects and the prevalence of academic literature focused on the practical needs of businesses (Jeschonowski *et al.*, 2009; Fedotov & Krotov, 2011).

The Global Supply Chain Forum (GSCF), a group of non-competing firms and a team of academic researchers, provides the following definition of SCM: “SCM is the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders” (Lambert & Cooper, 2000).

Chen & Paulraj (2004) also state that the term of SCM has been applied “to explain the planning and control of materials and information flows as well as the logistics activities not only internally within a company but also externally between companies”.

Thus, SCM is more than just logistics as it is driven beyond internal organizational actions into the integration of business operations in the supply chain as well as acts across inter-organizational boundaries (Cooper *et al.*, 1997). For all that a typical supply chain can be depicted as “a network of materials, information, and services processing links with the characteristics of supply, transformation and demand” (Chen & Paulraj, 2004).

According to Wickramasinghe & Alawattage (2007), SCM ensures a continuous flow of products and services along the production and distribution chains. So, SCM can be viewed as a system of relationships (Fedotov & Krotov, 2011; Wickramasinghe & Alawattage, 2007) which integrates all businesses processes and links them across intra- and inter-organizational boundaries (Cooper *et al.*, 1997; Lambert & Cooper, 2000). SCM creates a special field for multiple interdependencies between organizations (Wickramasinghe & Alawattage, 2007).

Wickramasinghe & Alawattage (2007) emphasize that the development of such interdependencies between organizations reshapes the design of MCSs and their use. MC regarding supply chain actions can function as information and communication technologies which facilitate operations within inter-organizational relationships. Thus, SCM extends MC routines and practices beyond the organization into the network. MC acts as an enabling institution which makes relationships and interdependencies visible and possible for the “actors” within the network of IOR (Wickramasinghe & Alawattage, 2007). Though the nature of this “enabling institution” of control and its involvement in the constitution of networks are still poorly investigated (Wickramasinghe & Alawattage, 2007).

Dechow & Mouritsen (2005) investigate how an information flow of such a MCS as ERP based on financial data can coexist with the physical business-process oriented logistics based on non-financial data. Their findings disclose that while supply chain structure mostly remains “plastic” and can be changed at any stage of practice, the accounting structure is “plastic” only on the pre-practice stage. Then the corrections or retranslations in MC technologies are supposed to attract the

non-financial data just to make organizational actions visible (Dechow & Mouritsen, 2005). This rejects some casual assumptions about the need to develop some specialized technologies for MCSs in supply chain settings (Jeschonowski *et al.*, 2009).

Lambert and Cooper (2000) try to revise the original definition of logistics as a part of SCM provided by Council of Logistics Management (CLM) in 1986<sup>1</sup> and argue that companies aim to manage their supply chains to the point of consumption, because whoever has the relationship with the end user has the power in the supply chain. Their point of view can stand out through the whole our research devoted to industries located in remote areas with sparse transportation systems where SCM is of vital importance in order to survive.

Regarding our research context which is addressed to extractive industries' issues associated with their remote location and limited access to markets, the geographic aspect takes on a special significance in SCM. Supply chains can also be viewed as linkages between organizations and regions. These linkages like bridges transfer products or services and thereby bind organizations in one network (Darwent, 1969) creating inter-organizational relationships (IOR). Information flows and control "technologies" move through supply chains or "an axis of development" (Pottier, 1963 in Darwent, 1969) from one local contexts to others.

SCM can be viewed as an environment or network consisted of different "actors". This helps us look into the emergence of interdependencies within the IOR and the process of regulation of interdependencies by MCSs. The last point follows the ideas of Mouritsen & Thrane (2006), who found that the control mechanisms are involved in the construction of network boundaries, and hence they control, and (re)translate by own efforts the communications between actors, i.e. supply chains between partners within one network.

### **2.3. Change of MCSs through the perspective of actor-networks in IOR**

The paper discusses about control mechanisms and interdependencies within a supply chain network through the lenses of ANT.

Actor-network approach is based on the interaction between human and non-human elements in the structuring of society (Latour, 2005). Actor-network theory (ANT) explains the roles played by humans and non-humans such as technology, science and nature (Latour, 2005). Humans and non-humans are presented as "certain "actors" who are active and innovative in developing and propagating a particular science and technology" (Wickramasinghe & Alawattage, 2007). MC is regarded as a technology of decision-making which is subject to the actions of "actors" through networks.

ANT provides framework for studying and comprehending "the fabrication of a specific phenomenon through a process of debate, dialogue and struggle" (Mouritsen *et al.*, 2001, p.736). It focuses on "translating knowledge" when previously accepted facts are translated into new knowledge. It is also supposed that the network exists in its current form in a short-time period only to undergo further development or change and take on a new reality (Latour, 2005). The network attains its objectives through "boundary objects" which assist to translate a well-known technology into local contexts (Wickramasinghe & Alawattage, 2007). Thus, the translation of technologies such as MC can be driven from a distance (Wickramasinghe & Alawattage, 2007). This fact brings actor-network approach to Czarniawska & Joerges's framework regarding the travel of "ideas" such as control procedures in time and space and their subsequent (re)translating in local contexts that was mentioned above.

"Actors" form "networks" by circulating "intermediaries" among them. "Intermediaries" align different actors for the network's own interest and assist "actors" to communicate and influence each

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<sup>1</sup> The Council of Logistics Management defined logistics management as: The process of planning, implementing, and controlling the efficient, cost-effective flow and storage of raw materials, in-process of inventory, finished goods, and related information flow from point-of-origin to point-of-consumption for the purpose of conforming to customer requirements.

other in a “network” through the “translating” process of one actor’s existing structures/objectives into new forms (Wickramasinghe & Alawattage, 2007). “Networks” such as MCSs cannot be studied without thorough examination of the nature of “intermediaries” such as rules and procedures which have to operate in a certain manner under particular circumstances (Wickramasinghe & Alawattage, 2007). In order the network operates successfully the circulation of intermediaries needs to be coordinated and regular.

Some authors (Chua, 1995) have applied ANT as a lens to explain accounting in a social context, others (Quattrone & Hopper, 2001; Jones & Dugdale, 2002; Hansen & Mouritsen, 2005) associate it with the “translation” processes of control mechanisms over time rather to present a process of strategy implementation and there are just little researches (Mouritsen *et al.*, 2001; Mouritsen & Thrane, 2006) devoted to studying networks of formally independent organizations.

In order to identify a variety of practices in inter-organizational relationships (IORs) such as strategic partners, supply chain, business and outsourcing relationships (Kraus & Lind, 2007), ANT has tried to explain MC change through conducting interpretive case studies with a rich number of empirical illustrations (Wickramasinghe & Alawattage, 2007). Below we would like to give a few examples of case studies in order to look at how actor-network features can be reflected concerning MC change processes.

Quattrone & Hopper (2001) apply actor-network concepts in order to understand the evolutionary nature of MC change processes. They try to imagine accounting as “a process of fabricating knowledge (Latour, 1999) and argue that though MC change is initiated centrally on the top, the very process of change in the local context takes a decentralized nature because of the interaction of human and non-human elements. Quattrone & Hopper (2001) emphasize that if human and non-human elements interplay with unpredictable outcomes then the change process will be driven through unpredictable ways. The authors judge that the essence of MC is no longer to prescribe the right course of organizational actions, but rather to describe and guide the possible course of actions. According to them, the control task is no longer to facilitate organizations to become isomorphic to a certain knowledge (be it real or socially constructed), but rather to facilitate to construct knowledge through organizational actions (Quattrone & Hopper, 2001). However, their approach pays little attention to how MCSs influence on other actors (Mouritsen, 2005).

Also through a network of human and non-human elements Jones & Dugdale (2002) trace the development of activity-based accounting (ABC) from its rise (when ABC was still a possibility) to widespread adoption in practice (when ABC became a certainty). Being a control system ABC is viewed by the authors as a network which consists of “actors” and “intermediaries” where the last-mentioned define the relationships between actors. Jones & Dugdale (2002) discover ABC as “a global expert system” which is mutually formed with the construction of the actor-networks which create it and claims to help managers gain control in the modern world. The main idea is that control mechanisms can experience different kinds of change but translating processes can lead to very much unpredictable outcomes because the knowledge comes from certain actors and networks. Jones & Dugdale (2002) warn about new forms of risks when the “bandwagon” of a control mechanism may become hitched to the “juggernaut of modernity”<sup>2</sup> being crushed by the wheels of these unpredictable outcomes.

So, according to Jones and Dugdale (2002) the knowledge can never be guaranteed and thus is not ultimately trustworthy. The modern world is changeable and if we likened it as a runaway engine of enormous power that we try to drive but fear can rush out of control at any moment. There is something that is always out of our control (Wickramasinghe & Alawattage, 2007).

In turn, Hansen & Mouritsen (2005) study the “translation” processes or “mobilisation” of the

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<sup>2</sup> Jones and Dugdale (2002) made the best use of two metaphors in their research where “bandwagon” means a fashionable movement attracting more and more people and “juggernaut” means an idea people blindly worship and follow (mainly with tragic consequences) as well as an incarnation of Vishnu, during the festival in the Indian city of Puri the devotees rushed into his processional chariot, considering the great good fortune to die under it.

BSC as a control mechanism in four Danish companies where they consider BSC to be a plastic and enough flexible tool which managers can reshape or translate to particular local contexts. The notion of “mobilisation” was suggested by Mouritsen (2005) as a process which intervenes into a “design” of MCSs and creates supplements to change the conditions for the design to work, and thereby causes transformations in the organizational actions. Mouritsen (2005) also mentions that resistance nevertheless exists and “is part of the mobilisation of accounting”. So, “mobilization” process is not intended to abandon the existing design but rather to repair and revise its assumptions and consequences “in making the design perform in relation to organizational concerns (Mouritsen, 2005).

Hansen & Mouritsen (2005) demonstrate that the BSC gains its unique colourful shade in the spectrum of local contexts. At the same time the authors argue that it is so mush plastic that is able “to keep an identity” to existing practices that travels between the local contexts of its application.

Mouritsen & Thrane (2006) try to penetrate into the network of formally independent organizations in order to explore control mechanisms which hold and interlock actors within one network keeping its integrity. The network is represented as an integrated entity with a common objective but with unequal flows of resources and knowledge. The authors argue that the partners have a different degree of interdependences across the network and may not benefit equally from resulting decisions. That can provoke “contradictions” in the network (Wickramasinghe & Alawattage, 2007).

Mouritsen & Thrane (2006) come to a rather exciting conclusion that MC technologies are involved in building the boundaries of networks. Control technologies define the relationships between partners (“actors”) and their operational actions within and beyond the network. Thus, through MC an “actor” and the network itself constantly redefine each other because one is dependent on the other.

Summarizing all the above, ANT assists researchers “to follow “actors” who mobilize new technologies” and to investigate how new MC technologies are translated and fabricated into local contexts. However, what is happening when a new actor is embedded into a network, be it a new control mechanism or an own fleet for cargo transportation? how does a network respond in this case? At the same time adding a new actor into the network of IORs can increase its convergence or divergence. How can we assess the meaning of an intermediary in this new situation? These questions are still remaining opened in theoretical aspect.

In order to add some criticism to our research approach ANT tries to investigate “boundaries of translation” in IORs rather than describing intra-organizational operations (Wickramasinghe & Alawattage, 2007).

According to Kraus and Lind’s review (Hopper *et al.*, 2007, Ch.13) some companies enter inter-organizational relationships in an attempt to increase revenue by gaining access to contemporary resources, to improve product development, and to get better access to customers. Other companies attempt to decrease costs by achieving economies of scale by engaging in joint research projects and/or joint marketing or production activities. The formation of inter-organizational relationships also creates barriers to entry for competition, by securing long-term relationships with key suppliers in order to exchange knowledge and to cooperate in technological development. Thus, we can suppose that companies have more positive outcomes within the network of interrelationships in order to achieve flexibility, obtain the objectives of efficiency and reduce the negative effects of competition for further effective implementation of their strategies.

However, relationships within the network are characterized by emerging interdependencies between the partners. As it was explained by Kraus and Lind (2007) the interdependence can be created through the adaptation of activities and resources within the individual business relationships. They imagined inter-organizational relationships as an element within a network of relationships which are interdependent with other elements of the network. Interactions between two companies, for example A and B, can have an influence through network effects on company C. Also

interdependencies between organizations can connect competitors to each other, even though they do not any direct interactions.

Thus, we consider actor-network approach to be meaningful to investigate interdependencies between actors within IORs and how the actions of one actor affect the actions of others.

Actor-network approach is interesting to explore “How?” the networks get formed, hold actors together and how MCSs are created among actors. This helps us to learn the mechanism of MCSs mobilization in a certain organizational action exploring the continuous transformation of MC practices in the development of SCM which may generate changes even in the external institutional environment (Modell, 2009).

We imagine SCM as a network of interdependences in IOR. Inside the network actants become actors, “entities that do things” (Latour, 1992). A network aligns different heterogeneous elements where MCSs act as certain “actors” who are active and innovative in developing and propagating a particular knowledge [science] and technology (Wickramasinghe & Alawattage, 2007).

MCSs are products of the network which has inter- and intra- organizational effects and, as such, can be mobilized and used to shape not only the relationships but also the boundaries of networks (Kraus and Lind, 2007; Mouritsen *et al.*, 2001).

Investigating only inter-organizational relationships we focus on the network stabilization process to find out how “actors” are aligned in the network through intermediaries (products or services) in the context of mining industries in the Russian High North.

Modell (2009) discusses that the last tendencies of institutional researches on MC make more emphasis on the recognition that there are some particular “actors” who may emancipate institutional constraints and resist even institutional change. He points that it is quite a new research direction in institutional theory which is not so much studied to relate ANT as a compliment to institutional theory. Modell (2009) also points out the lack of knowledge about how changes operate across different levels of operational actions and how MCSs practices are applied in everyday actions in order to change and stabilize interdependencies in the network of inter-organizational relationships.

And if MC mechanisms are involved in constituting the boundaries of network (Mouritsen & Thrane, 2006), the mobilization of one partner’s control technologies may result in mobilization of interdependent relationships within the whole network.

Through actor-network approach we investigate the change processes of MCSs within one particular organizational action. It gives a chance to add the knowledge in the literature what the change of MCSs is in details.

### **3. Methodology**

#### **3.1. Research design**

In order to investigate and understand the research phenomenon in its context-settings (Näslund, 2002) or how MCSs act in its everyday organizational context (Tomkins & Groves, 1983) we apply a *naturalistic* approach. Our investigation tries to produce findings arrived from the real-world environment where the “phenomenon of interest unfold naturally” (Patton, 2001, p.39) and, thereby, we build the *qualitative research*.

The research is both *descriptive* to provide the research with “concrete states of affairs” and find the explicitly adequate explanation (Latour, 2004, p.65) of how MCSs modify when the links between actors are retranslated within the network and *explorative* to understand and develop the knowledge about the processes taking place in the interaction of the research phenomenon and context (Morris and Wood, 1991).

The philosophical reflections are determined in dichotomy between ontological and epistemological perceptions. However, the application of actor-network method in our research in contrast to social constructivism actor-network method emphasizes that reality is constructed by the interaction of more than one actor and has mostly epistemological foundation offering to explain how MCSs are adopted within the reality. Interpretations as re-translating processes take a special

place in ANT. Translation is the circular process of “interpretation” or as Callon (1991 in Cordella and Shaikh, 2006) puts it, the definition that every actor makes of other actors in the actor-network. For interpretivism reality is created socially in the individual’s mind. However, in the aspect of ANT reality emerges outside the individual’s consciousness, “out there”, more objective. Thereby, ANT suppresses its own ontological assumptions (Cordella and Shaikh, 2006) and we take the research context of mining industries located in the Russian High North as a given objective reality which does not require an interpretive explanation for the data it accumulates (Latour, 2004).

We just “prefer to follow [our] actors” (Latour, 2004, p.75) during our investigation because we assume that actors, its activity and interdependencies between them are able to lead us to what has been really happening in cargo transportation of mining industries located in the Russian High North.

*Case study* approach is applied about extractive industries located in areas of the Russian High North in order to find the answer on the question “how?” MCSs are modifying which is addressed to actor-network approach applied in the research. According to Yin (2003) a case study method helps to investigate a phenomenon within its real-life context especially when the boundaries between the phenomenon and context are not clearly evident. Case study provides us with a detailed examination of MCSs in real action making it possible to “dug” into what happened behind closed doors of the research phenomenon (Flyvbjerg, 2006).

According to Fedotov & Krotov (2011) the researches in the field of SCM often based on the dualistic relationships and exclude an analysis of extensive sampling. That results in conclusions based on unreliable data. The authors also emphasize that researchers often analyze detached fragments of a supply chain, but research findings are extrapolated to the whole supply chain. Fedotov & Krotov (2011) argue that one of available solutions in this case and to obtain more reliable data can be researches based on a larger data sample from at least three links in the supply chain.

That’s why our case study is based on the network which involves more than dualistic relationships.

### ***3.2. Empirical data collection***

Empirical data is based on a horizontal network which aligns mainly three heterogeneous enterprises, namely two mining industries located in the Russian High North and one transport company which coordinates all cargo flows along the supply chains of the same mining industries.

The network is still studying with several techniques applied for data collection:

1. Face-to-face semi-structured and in-depth interviews- we “probe” answers, where we want our interviewees to explain, or build on their responses. Also it helps us hear interviewee’s “thinking aloud” about things he or she may not have previously thought about. This is very helpful to make the discussion easier and clearer. We take interviews with high experienced executives involved in control operations and strategic decision making. For achieving validity empirical data received from interviews is written and sent back to interviewees in order to receive their approval regarding the data processed and interpreted during the research.

2. E-mail questionnaire – Respondents are mainly executives and top-managers who used to be continually busy for the whole day. That’s why it is important to give them a chance to complete questionnaire at a time convenient for them (Scwarc, 2005).

3. Secondary data - including organizations’ internal documents, survey and general plan consisting of company descriptive information, both historically, present and predicted prognosis and video-taped observations, web-sites.

4. Observations – actually this type of data collection is quite limited because there is no access to group or partnership meetings. However, we were able to observe the organizational life through excursions at the enterprises, during long interviews. Also we had a chance to be engaged in the transshipment of feintein and metal products in Murmansk port delivered from port Dudinka.

At the same time we plan to be engaged in observation of unloading operations during spring flood in the port of Dudinka. We are like external experts watching the phenomenon in the process. It enables us to share the practice and routines of case studied company in reality what actually happens and feel deeply the observed phenomenon (Gill and Johnson, 1997). It is very useful to increase the quality and appropriateness of the research taking a “look-and-see” approach.

#### 4. Empirical findings

##### 4.1. The network of IOR

The horizontal network of inter-organizational relationships is illustrated on Figure #2 and represented by the following heterogeneous enterprises:

- MMC "Norilsk Nickel", polar division – the world’s largest producer of non-ferrous metals located in the remote area of Krasnoyarsky region in the Russian High North, namely town Norilsk and port Dudinka. Its extremely remote location makes this industry strategically dependent on the availability of strong transport links with the Mainland and global markets or other industries. The only transport connection for MMC “Norilsk Nickel” to distribute over-sized and heavy weight metal cargos outside is the Northern Sea Route (NSR) from port of Dudinka to port of Murmansk.
- Kola mining company – the largest mining industry and non-ferrous metals producer in the Murmansk region. We study only one of Kola mining capacities, namely refinery plant in town Monchegorsk which processes matte (feinstein) received from MMC “Norilsk Nickel” located in Norilsk.
- Transport branch of MMC “Norilsk Nickel” which is located in town Murmansk and coordinates all cargo flows along the supply chains of the same mining industries.

All three entities are in the same operational system in spite of the fact that their locations are distant from one another. They are subordinated to “Norilsk Nickel” corporation headquartered in Moscow, relationships with which we do not consider in this paper.

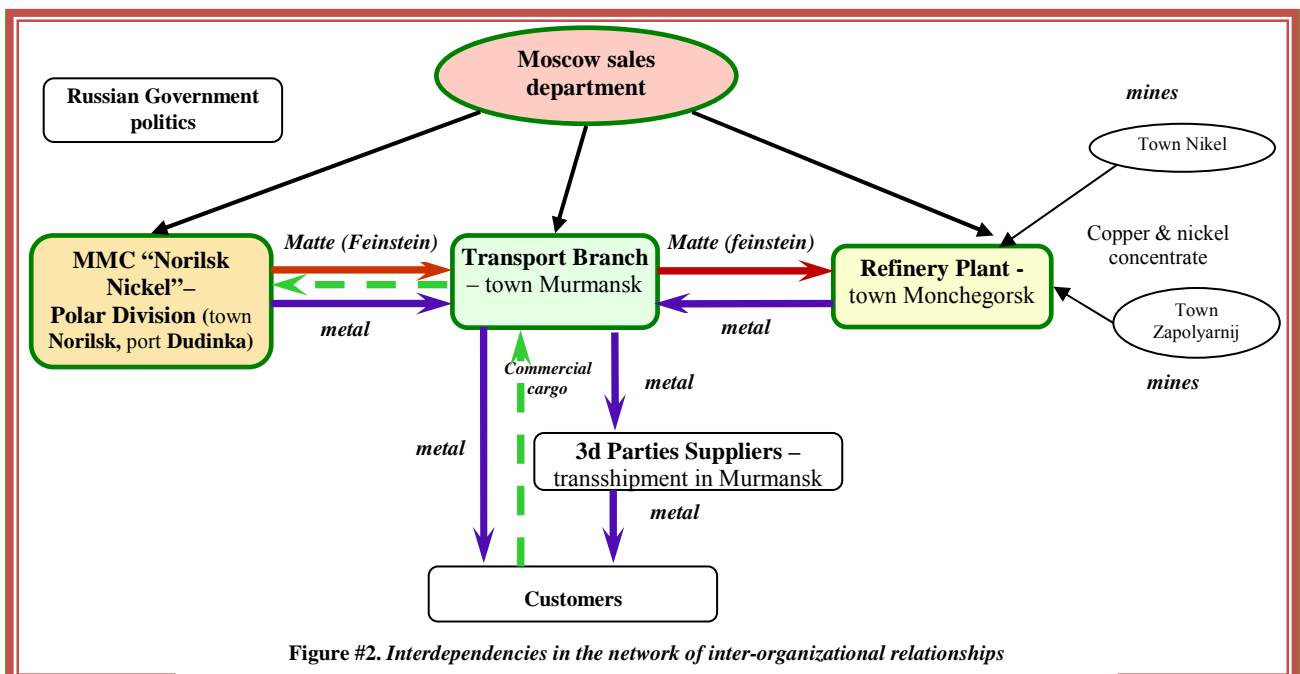


Figure #2. Interdependencies in the network of inter-organizational relationships

At the same time the studying network is assumed as a partnership between two mining industries located in the Russian High North because each of them is quite separate enterprises. All these actors within the network are intended to be aligned to achieve particular mutual organizational objectives, to perform a certain organizational action which explains why these certain enterprises enter inter-organizational relationships.

This network forms a special space filled with control mechanisms and technological standards in order to ensure a regular delivery of matte (feinstein) from MMC “Norilsk Nickel”, polar division to refinery plant in town Monchegorsk where the transport company takes a role of controlling and organizing the transportation and logistics services between both industries. Such an organizational action as the matte delivery affects other organizational actions of these actors within the network. The intermediate which assists to align these actors into the network is defined as feinstein (nickel matte). Also it helps the actors communicate with each other as well as they are able to translate one actor’s purposes / strategies for others and retranslate control mechanisms of one actor into new tools in the process of interaction between actors.

The emergence of this network is a defining of a necessity of this organizational action. Since 1990s the quality of ore mined in Murmansk region began gradually to decline. After the partnership between both mining industries was established in 1998 the standard of produced non-ferrous metals was required to be the same on both industries to be sold on the international markets. However, the quality of metals produced by Kola mining industry has ceased to match the quality of metals produced by MMC “Norilsk Nickel” in Norilsk. There emerged the necessity to concentrate the ore additionally. But it was not enough feinstein produced in Murmansk region. Thus, it resulted in emerging a need to deliver feinstein from the similar refinery plant located in town Norilsk. Feinstein has to be delivered regularly and any delay in delivery is able to result in blowing-out of blast furnaces in Monchegorsk that wastes a huge amount of Kola mining company’s money. As MMC “Norilsk Nickel” is a partner of this company, its operational activity can also suffer in the case of disruption in Feinstein delivery. So, all these actors within the network are also aligned by achieving a particular mutual goal.

When the partnership was organized, both mining industries were involved in inter-organizational relationships of outsourcing services performed by a third-party organization. That outsourcing company provided its own ships and ensured the whole process of cargo transportation from the port Dudinka to the port Murmansk. At the same time cargo shipping in this direction was historically performed only in convoy of several ships escorted by icebreakers to make a passage through ice fields. Control over the process of cargo transportation was only in the hands of the third-party shipping organization.

However, the economical crisis of 1990s in Russia resulted in the fall of industrial output in the Russian High North and the interruption of regular deliveries of cargoes (Granberg, 1997). Freight traffic on the direction from port Dudinka to port Murmansk reduced that made the third-party shipping company considerably increase transportation prices. At the same time the Arctic fleet became obsolete, the nuclear ice-breaker fleet required the renovation and replenishment. Thus, uncertainty, high prices of ship outsourcing and ice-breaker services as well as the vital necessity of regular transportation of feinstein to blast furnaces of Monchegorsk refinery plant made MMC “Norilsk Nickel” find new strategic solutions in building its own fleet of state-of-the-art ice-class vessels in order to obtain its transportation independence, to maximize the control over own supply chains and ensure regular transportation of feinstein and metal products to the market through the creation of its own transportation infrastructure.

Building and putting into operation of its own arctic fleet was like a new actor which was embedded into the horizontal network. This new actor has affected the relationships between other actors and their organizational actions and the level of interdependencies within the network.

Outsourcing relationships with the third-party shipping company were almost broken off. MMC “Norilsk Nickel” managed to modernize its supply chain design and provide adaptive control over all cargo flows including feinstein deliveries.

Modifying the supply chain design MMC “Norilsk Nickel” created the necessary prerequisites for extending the level of supply chain efficiency through increasing delivery speed and decreasing transport costs as well as the level of supply chain flexibility through faster adaptation to changing conditions for cargo transportation in ice fields.

In spite of the limited choice of available transport linkages with global markets and other



industries, MMC “Norilsk Nickel” has historically looked for the ways to diversify its supply chains. Its own Arctic fleet allowed to open new routes and capacities for cargo transportation. MMC “Norilsk Nickel” established regular cargo connection between the industry and the market that made it possible to react faster on changing market conditions satisfying client requirements and realizing its purpose of 100% production distribution with direct contracts around the world.

Figure 3 illustrates the location of MMC “Norilsk Nickel” and nowadays supply chain design for the transportation of metal products from Norilsk region to global markets.



Figure 3. Metal Delivering from Norilsk Region.

MMC “Norilsk Nickel” uses the next available transportation links:

1. Railway from MMC “Norilsk Nickel” to the port of Dudinka where metal production is transhipped from goods vans to ice-class vessels operated in Arctic waters;
3. The NSR from the port of Dudinka to the ports of Murmansk and Arkhangelsk – the main linkage for the year-round transportation of finished products (nonferrous metals):
  - to the port of Murmansk for further export;
  - to the port of Arkhangelsk as cabotage for the Russian market.
4. Railroads from the ports of Murmansk and Arkhangelsk to domestic customers;
5. The European Arctic corridor from Murmansk to Rotterdam/ Hamburg ports and North American market by own ice-class vessels and by third-parties ships;
6. The eastern part of the NSR from the port of Dudinka to Asian region mainly to China since October, 2010. The length of the round trip Dudinka-Shanghai-Dudinka via Northern Sea route is 12,342 nautical miles and it takes just 57 days including the steaming time of 41 days at average speed of 12,6 knots and 16 days in ports. In contrast, the distance via Suez Canal is 24,100 miles and total steaming time is 84 days (Norilsk Nickel Press releases, November, 2010). Time delivery is reduced in 2,5 times according to Igor Uzdin, Director of Polar division of MMC “Norilsk Nickel” (Gunina. 2010).

The main portion of the freight along the NSR now falls on the Norilsk industrial region.

Figure 4 illustrates nowadays supply chain design of the transportation of supplies and commercial cargo to Norilsk region.



Figure 4. Industrial and Commercial Cargo Delivering to Norilsk Region.

2. Via the river Yenisei only for the summer period from the port of Krasnoyarsk by MMC "Norilsk nickel's" barges - cabotage (construction and industrial) suppliers and commercial cargo.
3. To the port of Dudinka by own ice-class vessels: 1) from the port of Arkhangelsk - commercial and cabotage cargo, including dangerous cargo, 2) from the port of Murmansk - commercial and cabotage cargo, excluding dangerous industrial cargo.

The embedding of such a new actor as the own Arctic fleet capable of breaking the ice without icebreaker support has affected the standards of transportation within the network between these two mining industries located in the Russian High North. MMC "Norilsk Nickel" Arctic fleet became a new technological standard in cargo transportation in the High North which was incompatible with the historically technological one as cargo transportation only accompanied by ice breakers. Both technological standards co-exist in the current Arctic shipping, but are rather contradictory than complementary.

The embedding of the new actor into the network between both industries also reflected in control mechanisms. The control of cargo transportation was enhanced by using satellite systems and continuous monitoring how MMC "Norilsk Nickel" vessels move during the voyages between port of Dudinka and port of Murmansk. Also both mining industries implemented a system of balanced scorecard to improve MC performance.

As noted by the managers of both industries during interviews, after MMC "Norilsk Nickel" was able to increase flexibility in the supply chain design, its transportation system itself has created a system of Just-in-time. It is wonderful but it means that initially control mechanisms were not represented as Just-in-time control tool. The system of Just-in-time was received as an output in the process of modernization of supply chain design. MMC "Norilsk Nickel" tried to build a MCS for regular delivery of Feinstein and metal products. However, then this control system has turned into

Just-in-time mechanism. In such a way it worked out in such a local context as the High North where mining industries face with many transportation challenges.

At the same time Just-in-time mechanism works only in the networks of inter-organizational relationships. This mechanism needs the availability of interdependencies to ensure its own existence.

Before building MMC “Norilsk Nickel” own fleet such a MC tool as Just-in-time strategy has not been effective and has never applied in the context of the Arctic navigation. Thus, the introduction of such a new actor as the fleet which was built to meet MMC “Norilsk Nickel” own needs, had particular influence on the activities of other actors within this network.

## 5. Preliminary Conclusions

In this paper we tried to find an answer to the question “How?” the change processes of MCSs in SCM affect organizational actions of mining industries in the Russian High North. Quality standards as a control mechanism organize a special independence of one mining industry from another and the circulation of intermediary or in our case feinstein delivery within the network of IORs. We just followed our “actors” who mobilized technological standards and even embedded new ones in cargo transportation in the High North and thereby changed control mechanisms historically developed and applied. This helped us to retrace how MCSs can migrate beyond the organizational borders into a supply chain network of IOR, adapt to other actors’ activity, retranslate themselves and retranslate interdependencies in this supply chain network.

Based on our case study we come to the following conclusions:

1. Control mechanisms in order to fulfill the company's strategy retranslate the context in which they operate. In our case study the introduction of a balanced scorecard system modified the supply chain design.

2. Modification of supply chain design influences the level of flexibility and efficiency. In my case it ensured regular delivery at certain time and in given directions (even to Asia by own vessels)

3. Control mechanisms are able to retranslate the content of supply chain features. For industries located in the High North remote areas flexibility means is not a quick response to changing conditions, but begins to mean a fast adaptation to new conditions and keeping a strong linkage with other regions for regular transportation.

4. Control mechanisms are able to retranslate the design and use of a supply chain network into a new MCS. The introduction of balanced scorecard and the subsequent increase in supply chain flexibility have allowed the transportation system itself to create a system of Just-in-time as an output in the process of modernization of supply chain design.

5. Control mechanisms and MC tools can be applied both for industry adaptation within the institutionalized environment and beyond it if the environment can not satisfy the industry’s needs and purposes. But every modification of supply chain design makes industries change or retranslate their control mechanisms. It provokes a cyclical reaction to new retranslations in future because supply chain design requires to be periodically modified under changing market environment and conditions under the pressure of company’s strategy implementation. There is no right choice of supply chain design for your product once and for ever, it can be only an appropriate supply chain design in order to satisfy the company’s specific needs in a short period of time.

The findings confirm that networks really aim to become more heterogeneous including and/or attracting additional elements just to keep all other elements in place and, thereby, to ensure old actors’ existence and its own stability.

However, the question arises “Why?” the translation happens and its logic according to which the network is constructed (Callon, 1992). It should be interesting to learn the historical perspective about what preconditions/factors have influenced on the development and evolution of such networks as SCM in the High North where path dependence will be undergone in the synergy with

institutional theory. That gives us an opportunity to investigate what made existing actors as MMC “Norilsk Nickel” within the network of inter-organizational relationships to embed a new actor (as in our case its own Arctic fleet) and thereby retranslate interdependencies among already existing actors because as W. Shakespeare said in the *Tempest* that “what is past is prologue”.

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Working title: Management Accounting (and Control) in Norwegian festivals – an exploratory study

Stine Rye Bårdsen



## Plan

- Background/motivation
- Ideas for the current study
- Main question:
  - Are festivals interesting to study from a management accounting and control perspective at all?
- If yes, how should I proceed?
  - Theoretical approach
  - Research design

## Why festivals?

- Increasing in numbers (list of 610 on mic.no)
- Increasing attention in other research areas
- Receive attention in the media ☺
  - Radio shows
  - News Papers
  - Both positive and negative ☺
- Make places more attractive
  - Impact effects
- Limited knowledge about the management accounting and controls
- But do we need such knowledge?

3

## A previous study of Norwegian festivals:

- Examined financial reports of 60 Norwegian music festivals from the years 2005-2008 (These are now being updated to include the years up to 2012)
- Some findings:
  - The oldest festival in the sample (Festspillene i Bergen) was established in 1951, but approximately 80% established after 1990
  - High variance in revenues (both in size and source) and operating margins
    - +/- 50 % of the festivals had negative operating margins
  - Negative equity capital appears to be a common problem
  - Very few festivals vanish – but 2007/2008 appeared to be hard for some
    - Appears to have survival skill despite a poor financial situation

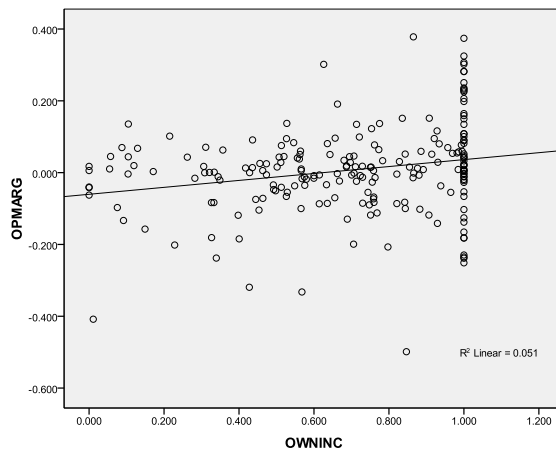


Correlations

		OPMARG	OWNINC	ADMFCOST	OPEQOPINC	OPINC	Poprock eq 1, other eq 0	Ltd eq 1, other eq 0
OPMARG	Pearson Correlation	1	.226**	-.007	-.035	-.003	.190**	.107
	Sig. (2-tailed)		.001	.923	.605	.968	.005	.115
	N	216	213	216	215	216	216	216
OWNINC	Pearson Correlation	.226**	1	-.291**	-.153*	.068	.616**	.355**
	Sig. (2-tailed)	.001		.000	.026	.326	.000	.000
	N	213	213	213	212	213	213	213
ADMFCOST	Pearson Correlation	-.007	-.291**	1	.088	.049	-.454**	-.264**
	Sig. (2-tailed)	.923	.000		.199	.476	.000	.000
	N	216	213	217	215	216	217	217
OPEQOPINC	Pearson Correlation	-.035	-.153*	.088	1	-.097	-.165*	-.111
	Sig. (2-tailed)	.605	.026	.199		.158	.016	.103
	N	215	212	215	215	215	215	215
OPINC	Pearson Correlation	-.003	.068	.049	-.097	1	.022	.111
	Sig. (2-tailed)	.968	.326	.476	.158		.748	.102
	N	216	213	216	215	216	216	216
Poprock eq 1, other eq 0	Pearson Correlation	.190**	.616**	-.454**	-.165*	.022	1	.408**
	Sig. (2-tailed)	.005	.000	.000	.016	.748		.000
	N	216	213	217	215	216	240	240
Ltd eq 1, other eq 0	Pearson Correlation	.107	.355**	-.264**	-.111	.111	.408**	1
	Sig. (2-tailed)	.115	.000	.000	.103	.102	.000	
	N	216	213	217	215	216	240	240

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



## If assumed interesting – what next?

- Theoretical approach and research question
  - Simple or holistic?
  - The budgeting (and accounting) process?
  - Design or use?
    - Or both?
  - Correlation btw. configurations of budgeting/accounting procedures and income structure?
    - And/or top management characteristics?
  - Other approaches?
- And the “problem” regarding performance measurement...
- Research design
  - Survey
    - But maybe some case studies as well?
  - Exploratory, yes.
    - But only descriptive?
    - Or are there relationships which can be of interest

7

## So please...

- ...help me ☺

8

# Actor-Reality Construction - A Pragmatic Constructivist Approach to Management and Accounting

Oppdal, October 10th, 2013  
Gudrun Baldvinsdottir



TRONDHEIM  
BUSINESS SCHOOL

## Presentation based on:

- Presentation is based on published articles:
  - The validity of management control topoi. Towards constructivist pragmatism. Nørreklit, Nørreklit & Israelsson (MAR, 2006)
  - Towards a paradigmatic foundation for accounting practice. Nørreklit, Nørreklit & Michell (AAAJ, 2010)
  - The rise of the balanced scorecard! Relevance Regained? Nørreklit, Nørreklit, Michell & Björnenak (JAOC, 2012)
- Notes from presentations (Lennart, Hanne, Will, Falconer)
- Examples of it's use

# Thinking

What can accountants gain from applying the principles of pragmatic constructivism?

**M**anagement accountants have long struggled to find a convincing conceptual framework that would help them to substantiate their profession's work in society, but pragmatic constructivism is one approach that could serve their purposes. Based in philosophy, this approach has four dimensions: values, facts, possibilities and communication.

• **Values.** All professionals should work according to established values that will give their profession credibility. These exist at three levels in management accounting. First are the values that characterise the profession in society – honesty and competence, for instance. Second are the values that characterise the organisation that employs them. These derive from its particular culture and management style. Third are the technical values that relate to the information produced by management accountants. These include factors such as accuracy and completeness.

• **Facts.** Management accounting needs to be based in fact – otherwise, its values will lack credibility. The facts recognised by accountants establish the substance of the profession. There are three factual types. First, there are those with a physical presence – eg, products and markets. Second, there are facts that are constructed – eg, costs and profits. These need to become accepted in the profession and wider society, thereby becoming institutionalised. Third, there are future estimates – eg, asset residual values and budget forecasts. Their accuracy can be confirmed only after the event, so their authenticity depends on the accountant's record of forecasting success. The second and third categories of fact are constructs. So, while accountants can claim to deal in facts, it is untrue to say that all accounting

**Why and wherefore: pragmatic constructivism is designed to help people relate to the realities of their situation**



information can be substantiated via a physical correspondence with reality.

• **Possibilities.** Without these there can be no action – ie, no management accounting. Possibilities are derived from recognised facts such as the existence of trading activity. Accounting possibilities need to be recognised and selected. Values are the basis for making the appropriate choice. For example, if the value of prudence is to be applied, then any possibility that does not involve it should not be considered.

• **Communication.** Social activities such as management accounting would not be possible without communication. Effective communication within the profession is essential in order to establish values, facts and possibilities, while effective communication beyond the profession is needed to ensure that these are all enshrined in the accounting information provided.

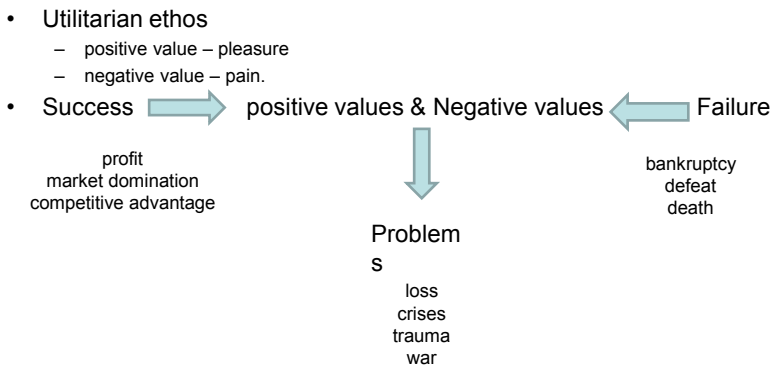
A conceptual framework for management accounting can be

constructed by integrating these four dimensions in a coherent way. This will:

- Formally recognise and define the values that management accountants try to achieve with their actions. This gives the profession its societal credibility.
- Base information in the reality of recognised facts. There should be a defensible factual base for management accounting – it was a failure to do this that gave scope for the rise of activity-based costing.
- Involve the identification and careful evaluation of possibilities for action inherent in the recognised facts of a given situation. Values should drive and justify the action chosen.
- Explain how effective communication, both inside the profession and with others who use management accounting information, is to be achieved.

Dr professor James Herremidde of Aarhus University, Larsen Herremidde of Aalborg University and Professor Mitchell of the University of Edinburgh Business School.

# Problems



# Success & the gap between the present and the future

- Fundamental issue of time
  - Organizing is about a future existence.
  - Without future – profit, market shares, wealth, health, etc. is irrelevant
  - Every action has a future goal
- Definition of success of actions is whether the future goal is reached
  - Control and planning ensure that sufficient conditions to reach future goals are at hand
  - In a changing world the future is significantly different from the present
- Facts, possibilities, values and communication changes.
- Can we manage the present-future gap?

## Integration: combining four dimensions

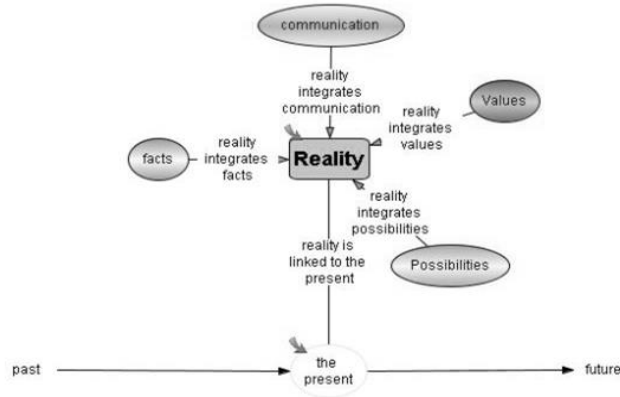
- Facts: Action needs to rest on basis of facts. The more uncertain the basis, the higher is the risk that plans regarding the future are unrealistic
- Possibilities: Actions must realize factual *possibilities*. Actions may be possible, but possibilities must be factual. Speculative possibilities may not be real possibilities.
- Values: Values must lie within the range of factual possibilities. – If the (factual) possibilities do not represent values, then they motivate no action. Without values no performance.
- Communication: Communication is the means to connect and coordinate different actors and units. Communication conveys the task and its meaning – including the values and relevant factual possibilities.

## Sufficient conditions: Integration of the four dimensions

- When there is a factual basis of the act
- When the possibilities pursued are factual
- When the values that drive the endeavor are within the range of the factual possibilities
- When the coordinating communication conveys the necessary facts, possibilities and values
- Then activities will be performed and likelihood of success increases

## Reality

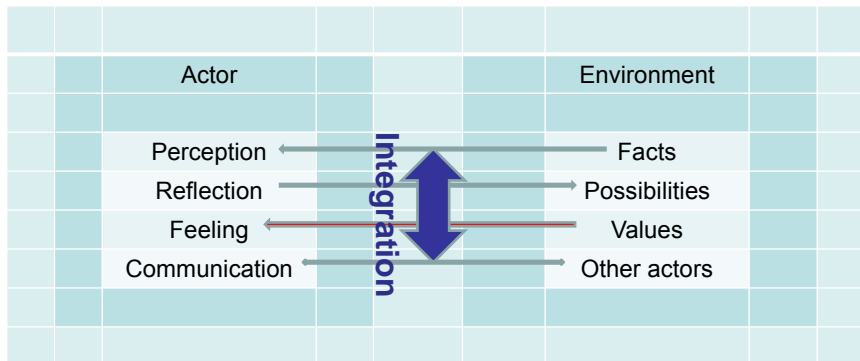
- Reality –the world is real and functional – is a construct based on integration
- Integration is constantly re-molded
- Reality is therefore a moving construct



## Dimensions are actor-world relations - reality

- Actors relate to the environment in order to act to maintain or create a future
- Each dimension represents a type of relation
- The relation connects the actor the world
- PC claims that the four dimensions must be connected
- If not integrated, the understanding of reality is misleading
- Thus realism to PC is a functioning integration of these four relations.

# Reality-Construction



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Trondheim, Norway

## Facts

- Well documented and evidence based
- Actor side – observational basis and collection of evidence
- Environment/world side – the things and phenomena observed



## Three types of facts

- **Objective**
  - Physical existence eg. land, buildings, equipment, etc.
- **Institutional**
  - Constructed by societal actors, eg. observable market values, and the adoption of currency as a measurement basis
- **Subjective**
  - Assumptions about the future, eg. estimates made of asset lives to measure depreciation, pension scheme liability, consumer preferences for certain assets
  - Pragmatic theory of truth not applicable, at best we have learning theory of truth

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## Possibilities

- Observation tells us what *is* there. Reflection aims at determining what might alternatively be there, i.e. what is *possible*.
- Possibilities are the result of systematic, logical reflection.
- Factual possibilities are possibilities embedded in the facts.

# Values

- Values are things that we want to have in our world
  - Basic values are subjective and motivate our actions and activities
  - Basic values uncover themselves through our emotional reactions
  - Instrumental (social) values are means to achieve the basic values.
  - Instrumental values are those valued considered to be important to society
- Coherence between subjective and social values is vital

# Communication

- Communication and the social dimension
  - Integration of facts, possibilities and values lead to action
  - Communication is needed to realise social action
  - Enables people to cooperate
  - Objectification of facts, values and reasoning
- Communication and accounting
  - Central to accounting practice
  - Information output has to be communicated to information users
  - Manifestation of the profession's values applied to their identified facts and possibilities

# Construct causality

- Integration provides a framework of values, facts and possibilities conceptualized in a unit topos
- Plans and decision is realized if based on a viable topos
- The managerial control task is to maintain or construct functioning causal relations
  - Managing business is thus about constructing a system of functional relations in which one action or event triggers the next action /event until the goal reached
  - Every manager is responsible to establish such strings of constructed causal relations so that his/her unit can perform its task
- The difference between functioning links and non functioning links is the degree of integration established
- The ability of the causal event to trigger the intended effect depends on the degree of integration: values with possibilities with facts expressed in the communication of control

Accounting facts and organisational change  
Applying the PC framework

## General assumptions

- Performance measurement (PM) is important
- Accounting facts are commonly used
- PM underpins the values a company wishes to emphasise
- Incoherence between facts and values create distrust

Baldvinsdottir, Burns & Strid

## The general framework

- Constructive pragmatism
  - Coherence in facts, possibilities, values and communication may create trust (where trust is justified)
  - Integration of the dimensions (facts, possibilities, values and communication) is fundamental to organize construct causalities
- Trust and distrust
  - Not opposite ends of a single trust-distrust continuum
  - Trust and lack of trust
  - Distrust and lack of distrust

## What is looked upon in the paper?

- Contradictory topos in and between the various employee groups created distrust
- Problems of distrust were “solved” by greater coherence of the management/company topos and the various employee groups topos
- Accounting facts did have a role in this process

Baldvinsdottir, Burns & Strid

## Constructed causality

- Organizations work through cooperation
- Cooperation is based on communication
- Trust is a condition for Communication
- Integration of facts, possibilities and values presuppose communication
- Communication of the factual condition, the possibilities this creates and the values that are at stake, represents the integration process and expresses the condition for successful business (constructed) causality

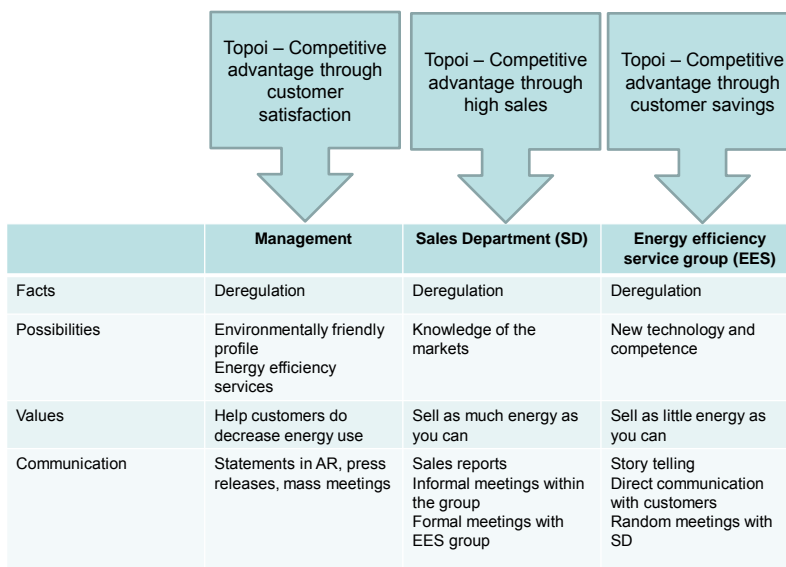
# The case

- Method - Interviews, meetings, discussions & workshops with employees & customers
- 4<sup>th</sup> largest energy company in Sweden
- Owned by the municipal and employees around 1000 people
- From energy delivery to energy services
  - Financially oriented terminology introduced
  - Contradictory messages created problems of trustworthiness – internally as well as externally

"We find it rather strange that you (the company) now wants to take care of us and even save energy for us. I don't think I have ever talked to anyone from you before, the only contact I have is when I get an invoice." (Customer 1)

## Incoherence

- beginning of the studied period



## Conflicts within...

- The new vision:
  - “Our business concept is first and foremost to sell light, power and heating together with helping our customers to achieve low energy costs, partly through being effective ourselves and partly by effective energy solutions for the customers.” (Company Annual Report, 1992, p. 4).
- The sales department view of the energy efficiency services:
  - They really think they are something. They think that their energy services are high-tech and complicated, but is this so called ‘new concept’ a rocket science? Is it? How difficult can this be? We actually know the market, and the market doesn’t want this (Salesman 1)
- The energy efficiency service view of the sales department:
  - “They are useless. They do not contact customers; they do not deal with customers’ needs. And if they would visit a customer – which is against the odds – they would try selling one product at a time, never suggesting a total solution for the customer. Also, all of them want to sell to the big customers. ” (EES engineer 1)

## Getting the facts right

- Selling points of the EES were presented by narratives and anecdotes.
 

“...and best of all, we have managed to lower their energy costs by 50%!” (Engineer 2, EES department)

- Accounting facts supporting the benefits for the company as whole where absent.

	PRE-EES (EUR)	Post-EES (EUR)
<b>Cost of electricity</b>	14 146	9 217
<b>Savings for the customer</b>		4 929

*Real Estate Company’s electricity cost savings, post adoption of EES*

“Why should we sell EES if it results in lower sales of energy, and thereby a lower income for us?”

## Coherence (?) - end of the studied period

	Management	Sales Department (SD)	Energy efficiency service group (EES)
Facts (Institutional)	Oligopoly market conditions	Oligopoly market conditions	Oligopoly market conditions
Possibilities	Customer lock in Price setters	Large and passive customer base Difficult for customers to change energy supplier	Long term customer relations Targeting the cost conscious customers
Value	Profitability	Profitability through sell as much energy as you can	Profitability through sell as little energy as you can
Communication	Financial measures, statements in AR, press releases, mass meetings, formal and informal meetings with smaller employee groups	Performance measures, informal meetings within the group Formal meetings with EES group	Profitability reports to management and sales, direct communication with customers Formal meetings with SD

## Getting the facts right

- Long-term relations with customer created greater profitability
- Profit sharing
- Changes in company values integrated with facts
- A movement from lack of distrust to lack of trust is possible through cooperation
- Relevant accounting facts reduced the distrust and meaningful communication could be established



## Concluding remarks

- Trust is associated with sharing of values and beliefs about the future.
- Absence of shared values hindered meaningful communication and cooperation
- Perceived lack of integrity on both parties behalf created distrust
- Possible to restore relationship when changes in the value dimension were backed up by accounting facts

## Accounting itself cannot create trust

**But:**

–Accounting information can be used successfully to restore relations that have become characterised with distrust since accounting information is generally regarded as some objective measure of extensive control that can be more reliable and trustworthy than other types of information

–Accounting facts can reduce the suspicion surrounding distrustful relations

–Accounting facts can thus facilitate the establishment of acceptable working relations between groups who distrust each other

–When distrust is replaced by lack of distrust, the process of achieving the stage of lack of trust can be initiated

# Construct causality

- Organizations work through cooperation
- Cooperation is based on communication
- Trust is a condition for communication
- Integration of facts, possibilities and values presupposes communication
- Communication of the factual condition, the possibilities this creates and the values that are at stake, represents the integration process and expresses the condition for successful business (construct) causality

## The case

- Middle sized European bank
- Privately owned and with over employees around 1000 people
- Profitability just about average compared with similarly sized European banks

## Change in the performance measurement

- The change was (partly) a reaction to the financial crisis
- The bank reflected a desire of changing the topoi, i.e. less focus on individual performance than previously
- Individual vs. team based performance
- From “Bonus Card” to Balanced Scorecard
- From departmental (only) to individual scorecards (in addition)
- Pre-change, basis for performance pay mainly based on individual sale
- Post-change, basis for performance pay was extended to include more team based effort

## Basis for performance based pay

	<b>2010</b>		<b>2011</b>
Individual sales	75%	Individual sales	50%
Team effort	25%	Team effort	40%
Max payout per year	60.000	Max payout per year	80.000

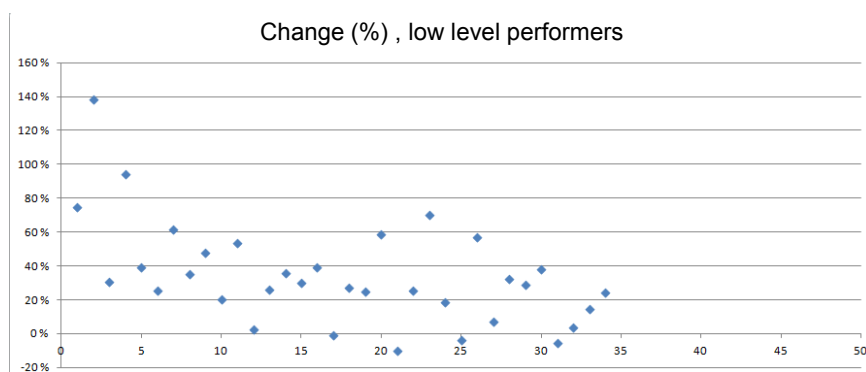
2010 - Allocation of “Team effort” done by manager

2011 - Allocation of “Team effort” split evenly between employees

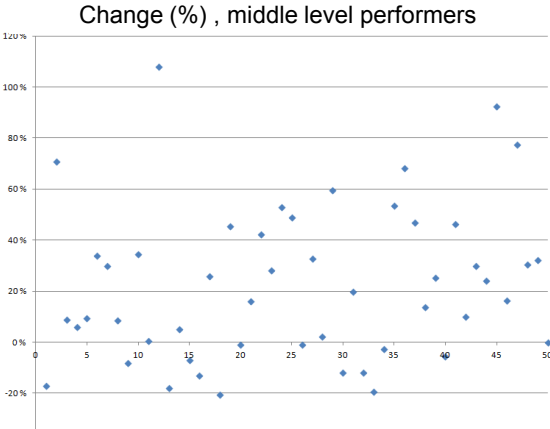
# Effects of the change

- Sales behavior of the loan officers changed

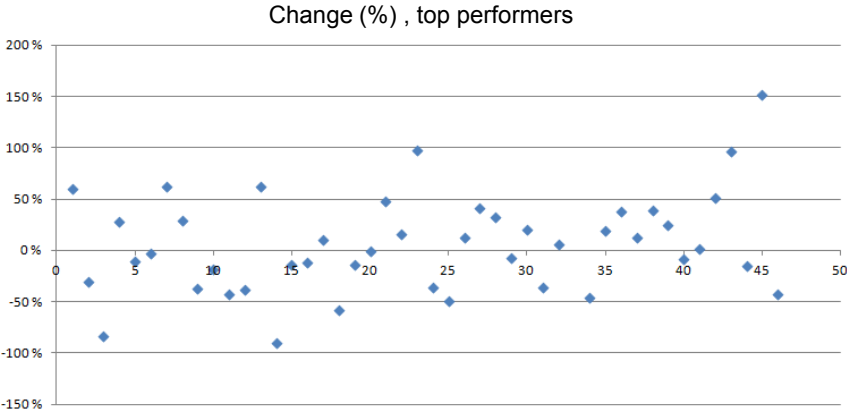
## Effects on sale



# Effects on sale



# Effects on sales



## Applying the framework - an experiment?

- Previously, I have not used the PC framework explicitly when collecting the data to be used.
- This time, questions in the interview guide included reflection on the four dimensions of reality; facts, possibilities, values and communication.
- Two individuals from the management group were interviewed together with eight loan officers.
  - 4 top performers
  - 2 middle level performers
  - 2 low level performers

## The question framed

- How do actors relate to changes in the appraisal system and its corresponding performance pay?

## The bank

	Pre-implementation 2010	Post-implementation 2010
Facts	Customer competition	Customer competition
Possibilities	The customers choice - Develop the skills of the loan officers - Pro-active loan officers	The customers choice - Further increase the competence of the loan officers - Pro-active loan officers
Values	Financial performance above average Customer satisfaction Focus on individual performance	Financial performance above average Customer satisfaction Less focus on individual performance
Communication	Vision Formal role description Bonus card Monetary rewards Informal and formal individual meetings	Vision Formal role description Balanced scorecard Monetary rewards Informal and formal individual meetings Group meetings

The loan officers	Pre-implementation 2010		Post-implementation 2010	
	Group 1	Group 2	Group 1	Group 2
Facts	Measurement and rewards (M&R) on the basis of bonus card		Measurement and rewards (M&R) on the basis of BSC	
	Act upon the bonus card		Act upon the BSC	
Possibilities	<ul style="list-style-type: none"> <li>• M&amp;R as a direction for personal action</li> <li>• Focus on sales</li> </ul>	<ul style="list-style-type: none"> <li>• M&amp;R as integrated part of the job</li> <li>• Focus on carrying out the job required</li> </ul>	<ul style="list-style-type: none"> <li>• M&amp;R as a direction for action</li> <li>• Focus on goals possible to influence</li> </ul>	<ul style="list-style-type: none"> <li>• M&amp;R as integrated part of the job</li> <li>• Focus on doing the "right thing"</li> </ul>
	Customer satisfaction		Customer satisfaction	
Values	<ul style="list-style-type: none"> <li>• Achieve goals</li> <li>• Fair evaluation by the management (individual efforts)</li> <li>• Be seen by management</li> <li>• Individual performance and rewards</li> <li>• Financial rewards needed</li> </ul>	<ul style="list-style-type: none"> <li>• Do a good job, for oneself and the customer</li> <li>• Fair efforts (individual and team efforts)</li> <li>• Co-operation and focus on overall operations</li> <li>• Working tasks are not decided by the bonus card only</li> <li>• Financial rewards appreciated</li> </ul>	<ul style="list-style-type: none"> <li>• Achieve goals</li> <li>• Fair evaluation by the management (individual efforts)</li> <li>• Be seen by management</li> <li>• Individual performance and reward</li> <li>• Working tasks decided by the dimensions of the BSC</li> <li>• Financial incentive needed</li> </ul>	<ul style="list-style-type: none"> <li>• Do a good job, for oneself and the customer</li> <li>• Fair evaluations (individual and team efforts)</li> <li>• Co-operation and focus on overall operations</li> <li>• Working tasks are not decided by the BSC only</li> <li>• Financial rewards appreciate</li> </ul>
Communication	Bonus card Precipitation in "top tours"		Individual BSC Non-communication	

## Group 1

- The values represented in the Bonus card, i.e. focus on individual performance are more in line with this group.
- Team performance is seen de-motivating
- Free riding is mentioned several times
- Intentions of the change not communicated

## Group 2

- The values represented in the Balanced Scorecard, i.e. less focus on individual performance are more in line with this group
- Team performance is seen as motivating
- BSC is seen as representing the performance more fairly
- Free riding never mentioned
- Intentions of the change not communicated



# Afterwords

- In the aftermath of the finance crisis, the bank wanted to change its topoi
- This was partly done through changes in the control system and the performance pay structure
  - Less focus on sales
  - Increased focus on team efforts
- Most loan officers expressed that although other dimensions, such as customer satisfaction, were included in the BSC, it was the sales that was emphasised, discussed and rewarded.
- 2013 - Return to individual focus, 60% individual and 40% team based
- Momentum of the bank industry – sales?



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HANDELSHØGSKOLEN I BODØ - HHB



# The reactions of Norwegian municipalities on financial management problems and crisis—a contradictory blame game

Workshop in Management Accounting - Oppdal, Norway  
9<sup>th</sup> – 11<sup>th</sup> October 2013

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&

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## Introduction

- People have tended to engage in blame games whenever things go wrong, attempting to avoid unwarranted repercussions (Douglas, 1992)
- Although actors initiating blame games presumably have an idea about what effects they are seeking to obtain from the blame gaming, **it is not given that these effects materialize**
- Recent publications (Junior et al, 2012, Schwartz, 2012) underscore the need to put greater emphasis on how we **study** catastrophes and the ways in which the blame game participants seemingly receive **counterproductive results** from their blame game

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## Introduction II

- Financial crisis
  - Big losses
  - More blame games
  - In the public debate, most attention has been on the **macroeconomic level**, seeking to find solutions to the financial problems (regulatory perspective) or merely depicting scapegoats. Less is known in the literature about how the global financial crisis has transcended and been responded to **locally**
  - Particularly, what happens when loss incurring actors in a local setting seek to recapture their money?

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## Introduction III

- In Norway, the public was suddenly shocked by staggering **headlines** in the media about **big financial losses** incurred by a number of Norwegian municipalities as a result of their investments in complex financial products (CDOs).
  - Combined they lost several hundred millions NOK on bad financial investments and management.
  - This came to be known as the **Terra-scandal**. Years later the involved municipalities are still struggling to cope with the financial aftermath of the Terra-scandal (see e.g. NRK, 2010).
- We seek to contribute to the literature by learning more about the extent to which blame games yield expected results, especially in complex settings intertwining the public sector and the financial market forces

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## Research questions

- We set out to answer two research questions:
  - **How was the blame game in the Norwegian case undertaken?**
    - By applying ANT we narrow this down to the following inquiry: what controversies were rendered visible with the outbreak of the Terra scandal, and what devices were mobilized by the actors to shun blame?
  - **What direct financial effects of the blame gaming can be traced?**

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## Approach

- We deploy Actor network theory (ANT)
- ANT is particularly applicable:  
*in situations where innovation proliferates, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates, ... you have to follow the actors themselves” (Latour, 2005, pp. 11-12).*
- *Emphasis on:*
  - *Controversies*
  - *Intermediaries vs. mediators*
  - *Reassembling the social through changes (and translations)*

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## Approach (cont.)

- Latour (2005) advocates the need to see **the social as an output of dynamic interactions amongst various actors.**
- As such, different uncertainties are called upon to render the traces of the social more visible:
  - Group formation
  - Action is overtaken
  - Objects too have agency
  - Matter of facts vs. matters of concern

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## Research setting and data collection methods

- **Research setting:**
  - Local government level (municipalities) in Norway
- **Data collection methods:**
  - *Documents, e.g. :*
    - financial statements
    - Internal regulation
    - External regulation
    - Evaluation reports (by the office of the Auditor general and hired externals)
    - Newspaper articles, information on municipalities' home pages etc.
  - *Interviews and informal conversations*

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## Key events in the Terra scandal

- 2001-2002: Terra Securities launches a new funding scheme.
- 2002: Municipalities are requested to outline internal financial management regulations
  - Later, some municipalities adapt their regulations to fit their investment needs/new prospects
- 2002: The Vik-letter
- 2004-2007: the investments are reorganized (repackaging)
- 20. Aug. 07: Terra informs the municipalities that the value of the bonds have fallen below the 55 % threshold: demand for more money
  - The municipalities pay, but remain silent about the transactions.
- Aug./Sept. 07: Hofstad reads in a local newspaper about Hemnes municipality's investment and starts to investigate
- 31. Oct. 07: The scandal becomes known nationally through a newspaper article by Hofstad in Finansavisen.

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## Key events in the Terra scandal (cont.)

- 31. Oct. 07 – onwards: Blame game period
- 19. Nov. 07: the municipalities refuse to make additional covenant payments related to their disastrous investments
- 19. Nov. 07: The case fully caught fire in the media
- 19. Nov. 07: The Financial Supervisory Authority withdraws Terra S.' license.
  - Terra S. is bankrupt the next day.
- Nov. 07 – 2013: Long series of events take place.

Two examples:

- 2009: fighting against the banks
- Sept. 10: A judge in the District Court of New York rules: Terra S. cannot claim compensation from Citigroup, but the municipalities can sue C. They do so.
- Apr. 13: Southern District Court of New York denied the municipalities involved in the scandal to get the lawsuit treated in American court. A spokesman for the municipalities (U.S. lawyer) says they will appeal the decision and describes the decision as "a temporary defeat."

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## Description of the blame game – overview

- "Blame games" refer to what happened after the outbreak in the media.
- The politicians involved were scrutinized by the media and others for their role and the things that happened.
- In the case material we have come across two sets of blame games or scapegoat missions.
  - One relates to the effort undertaken by the municipalities, led by their mayors in question to evade blame for their involvement in the Terra scandal.
  - The other story is one about the public's chase for scapegoats that set off when the Terra scandal became well-known in the national media in Norway toward the end of 2007.



## ***The public's chase of the money, the investments' backdrop and scapegoats in the Terra scandal***

- Led out by the investigative journalist Morten Hofstad.
- He read incidentally about a large loss (about NOK 40 mill.) incurred by one of the loss incurring municipalities, Hemnes.
  - Baffled by the size of the loss (50 % drop in a few weeks) and demands for payments to avoid the enforced sale covenant.
- The municipalities are unwilling to disclose information (officially)
- Terra Securities (the firm) is also reluctant to provide information
- Core "facts" and numbers in the case shifted constantly, partly because he was fed incomplete and wrong information by the municipalities
- Turbulent financial markets rapidly altered the market value of the investments, making it harder to overviewing the "facts" .
  - Essentially, matter of facts turned into matters of concerns.
- Hofstad's story makes the front page headline 31. October.2007



## The battle over "facts"

- Key formation of groups and anti-groups
- Demand for information from the public
- Terra S. fights back, seeking to silence the critique:
- A key part of this strategy was to clearly make the point that nothing had been lost and that the numbers and information conveyed by Hofstad was incorrect.
  - one of the key brokers, Harald Nordberg exclaimed the following: *"Some media channels have written that you have lost money. That is bullshit"* (Sparre, 2007)
- Hofstad (2008) later described this experience as follows:
  - *"It was surprising to me that Terra's information strategy in the early phase [of the case] was so effective in competing media channels. Other media channels seemed to settle with the headline from Terra, stating that "nothing is lost", despite the size of the municipalities' investments with respect to their size, and the ways in which the problems in the American economy impacted the news at that time"*

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## Repositioning

- "After two days of publicity at the turn of October/November [2007], the Terra case shuts completely down in other media channels. The doubt starts to get to me, and questions such as: 'Am I completely sidetracked [?]' started to emerge" (Hofstad, 2008).
- Hofstad gets allies
  - The role of the NHH professor T. Johnsen
    - Helped Hofstad to mobilize effort, knowledge, competence and a position that made it easier to sustain the contradictory information and pressure stemming from Terra's information strategy
  - Hofstad and Johnsen seize the role of full-blown mediators.
- The Terra defense eventually falls apart as matters of facts transcends into matters of concerns (in the eyes of the public)
- 19. November the case fully catches fire

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## The initiation of administrative and political scapegoating

- Country governors launches assessments of the loss-incurring municipalities.
- The Financial Supervisory Authority withdraws Terra S.' operating license.
- The Office of the Auditor General in Norway launches an investigation of the Vik letter:
  - Politicians enters the blame gaming
  - Misconduct in the decision-making: routine problems
  - Reinforces the impression of the Vik letter as being an actant: Mediator rather than an intermediary.
- More investigations: internal vs. external evaluation committees
  - Fierce criticism (especially the externally led committees)
    - Including the violations of the Local Government Act and the municipalities internal financial management regulations

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## More on translations, mediators and distortion

- Initially we regarded the internal financial management regulations as an intermediary:
  - A key mechanism to enable sound investments
- We were wrong!
  - The regulations were overturned and thus given new meanings with unpredictable outcomes.
    - Happened through new translations and fabrication of the information content.
    - Other municipalities did not change their regulations, but simply violated them.
- The municipalities' interpretations of the LGA § 52 were also found in void
- Essentially, action was overtaken:
  - Municipalities became overly creative in removing controversies and investment hurdles, clearing the way for what turned out to be a financial disaster

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## ***The blame game orchestrated by the loss-incurring municipalities***

- Early on, few interactions across the municipalities
  - Gradually, between 31. October and the 19th November (when the case fully caught fire) the loss incurring municipalities joined forces.
  - Two main groups:
    - The Nordland municipalities (Narvik, Rana, Hemnes and Hattfjelldal)
    - Another emerging group of loss-incurring municipalities
- The two groups join forces along the way.

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## **Identifying anti-groups**

- The municipalities searched desperately for information and someone to pin the blame on
- They identified a list of anti-groups (including):
  - Terra S.
  - The two Terra S. salespersons (Norberg and Opstad)
  - Citygroup
  - The owners of Terra
  - The funding banks (DnBNor and Depfa Bank)
  - The former prime minister of Norway

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## The municipalities main defense

- 'We knew nothing (about the problems) and were deceived by profiteers'.
- Soon, the defense cracks up ...
  - The municipalities are made subject to intense scrutiny by the media and various investigators (as mentioned earlier)
  - Early indications of the not so innocent politicians
  - The information about problems or uncertainties were available in several cases, but no one asked critical questions

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## Seeking to get their money back

- The aforementioned list of actors in the anti-group were targeted as a potential money source for covering the municipalities' losses.
  - Thus far, virtually all attempts to to regain money failed. Additionally, a lot of time was spent on the blame game.
- However, the municipalities searched for allies to help them in their struggle to regain money
  - Relying on various groups, but the most important actors include lawyers and consultancy-firms offering advisory services.
  - To illustrate:
    - Lawyer fees, relating to the USA based lawyers and Citigroup case amounted almost to NOK 90 mill before the municipalities decided to put them to a halt, agreeing eventually with the USA based lawyers to rely on the no cure no pay principle.

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## Concluding remarks

- While making the investments the politicians and administrators focused very little on technicalities (the discussed intermediaries that turned out to be mediators) – the non-human actors.
- Conversely, while making their defense the municipalities focused virtually exclusively on trying to find some scapegoats through technicalities
- First they spent a lot of money on something they did not know or understand and turned out to be a disaster.
- Thereafter they engaged in a new speculative endeavors to regain their money, thereby incurring considerable costs and thus far predominantly setbacks.
- Hence, this is a case of a contradictory blame-game.



## Contribution to the literature

- First, blame games become difficult to undertake with the desired blame shifting effect when partially (or completely) relying on intermediaries to argue ones case, rather than a larger set of mediators.
- Second, Financially motivated blame games might lead to exacerbating the financial risk and losses— bringing about diametrical financial effects.
- Third, with respect to public administration: the ways in which supposedly intermediaries actually turned out to be key mediators in the Terra scandal bears witness to routine problems and an overly confidence in the public sector system.