



Why Do Companies Use Rolling Forecasts?

A Case Study on the Rolling Forecast as a Management Tool

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Abstract

This thesis focuses on the use of rolling forecast as a management tool in companies. Increasingly dynamic business environments make it important for companies to be more responsive to adjust to changes. Through a case study approach, we aim to explore the drivers behind the use of rolling forecasts, and how the rolling forecast is used as a management tool in a company, namely OffCo. The study uses qualitative research methods, explicitly semi-structured interviews with employees in OffCo to collect the data for the thesis. Both the company and the respondents in this study are anonymized.

Our main findings show that there are two drivers that are specifically important for the use of rolling forecasts in OffCo; uncertainty and financial position. An interesting finding is that these drivers interact and are amplified by each other. OffCo have experienced increased uncertainty in recent years due to a dramatic drop in the oil price in 2014. This resulted in a weakened financial position causing challenges for the company. Due to the weak financial position, the consequences for uncertainty caused by fluctuating oil prices are more severe.

Further, we find that the budget and the rolling forecast is closely linked together. The processes of forecasting and budgeting in OffCo are interdependent, and the two tools have the same level of detail in information content. Rolling forecast is seen as a tool to improve the accuracy of the budget which is quickly outdated. The main purposes of the rolling forecast are therefore short-term decision making and planning regarding resources in the company. Moreover, the rolling forecast is used for performance evaluation in the same way as with the budget. The close link between the two tools seems to create confusion whether the rolling forecast is a target or a realistic prediction of future outcomes.

Through studying the use of rolling forecasts in OffCo, some potential improvements for the forecasting process have been detected. These include shortening the time horizon of the rolling forecast, reducing the level of details included in the forecast, and utilizing access to technology to make the process more efficient.

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1. Introduction

1.1 Report Background

In recent years the traditional budget has been criticized for being too rigid and static when markets change rapidly. Budgets are in such environments quickly outdated. According to Wallander (1999) the assumptions behind the budget are obsolete and irrelevant by the time the budget is approved and presented. When companies face a high degree of environmental uncertainty the management tools need to be adapted (Bjørnenak & Kaarbøe, 2011). Even if the budget is criticized, it is commonly used and described as a cornerstone of the management control process (Hansen, Otley & Van der Stede, 2003; Bjørnenak & Kaarbøe, 2011; Libby & Lindsey, 2010).

However, a study by Bjørnenak & Kaarbøe (2011) reveals that other management tools are also widely used among Norwegian companies. One of these tools is rolling forecast, which according to Morlidge & Player (2010) is a useful management tool for planning in uncertain environments. Lorain (2010) describes that, “rolling forecast technique permits companies to frequently revise their financial indicators, to link planning with strategy and to make appropriate decisions” (p. 179). A characteristic feature of the rolling forecast is that parts of each period will be included in the following period without any evident breaking point (Bergstrand, 2009). In this way, the definite fiscal year-end is abandoned.

When operating in uncertain and challenging environments, companies’ financial position can be affected, and the companies become subjects for external pressure (Bourmistrov & Kaarbøe, 2017). Under such external pressure companies tend to tighten control and become more centralized and standardized (Bourmistrov & Kaarbøe, 2017). Bogsnes (2016) states that when addressing a challenging market situation with tighter control, they risk reducing their flexibility, agility and dynamics. To secure efficiency, companies need to balance attention to tight controls with more open, informal and flexible information and communication systems (Chenhall, 2003). Rolling forecast is then important to support planning in times of global economic downturns (Becker, Mahlendorf, Schäffer & Thaten, 2016).

The transition from budgets to rolling forecasts can be supported by digitalization. Since the early 2000s companies have been able to automate the process of gathering and systemizing data in order to make the forecast process more efficient and of better quality (Kaarbøe, Knudsen & Meidell, 2018; Granlund & Malmi, 2002; Kumar & Petersen, 2012). The new wave of digitalization that companies are entering today enables them to make use of larger amounts and types of data for better predictions in their forecasting (Kaarbøe et al., 2018; Andreassen & Bjørnenak, 2018; Gandomi & Haider, 2014). This could also be a driver for the use of rolling forecasts.

This study uses a case-study approach where the object of study is a large company delivering subsea services to the offshore industry, hereafter called OffCo. OffCo operates in an uncertain and challenging environment, and the offshore supply industry is strongly affected by the oil prices. In 2014, OffCo experienced a severe drop in oil prices causing increased uncertainty and a weaker financial position. Through this study, we aim to investigate why OffCo use the rolling forecast, and how the management tool is used.

1.2 Relevance, Purpose & Problem Statement

This study aims to increase the knowledge about the use of rolling forecasts in companies. The literature has no clear definition of what a rolling forecast is, and we have scant knowledge about how it is used as a tool in companies. Further, we seek to explore why companies implement rolling forecasts, and why the tool gives value in companies already using the budget as a management tool. Despite the increased relevance of rolling forecast in practice, it lacks research on this topic. In order to study the use of rolling forecast and the drivers behind, we conduct a qualitative case study based on semi-structured interviews with employees in OffCo. By focusing on only one company we are able to get a deeper understanding of our topic.

Based on the report background and the relevance and purpose for our study, we seek to answer the following problem statement:

Why do companies use rolling forecasts, and how is forecasting used as a management tool?

In order to provide a stepwise approach to answer our problem statement, we have raised the following research questions:

1. *What are the drivers behind the use of rolling forecasts?*
2. *How is the rolling forecast used as a tool?*
3. *What are the differences between budgeting and forecasting?*

1.3 Structure

This thesis consists of eight chapters. We have started by introducing the background of the study and the choice of case company in the first chapter. In addition, we have described the relevance and purpose with the study and defined a problem statement. In the second chapter, we present the theoretical framework this thesis is built upon. This includes theoretical definitions and findings from previous studies. Further, in chapter three, we explain the methodological choices made and evaluate them. The fourth chapter describes the empirical settings, presenting OffCo's company structure, the market they operate in, and their management control systems and tools. This leads us further to chapter five where we analyze the empirical findings in relation to the literature and discuss the different research questions. We also discuss how the use of rolling forecasts in OffCo could be improved. Finally, in chapter six, we summarize the main findings and give some concluding remarks. This chapter also includes shortcomings and limitations of the thesis, and suggestions for further research. The last two chapters consist of references and the appendix, respectively.

2. Literature Review

This chapter presents the theoretical framework for this thesis and introduces central definitions and concepts. The literature review starts with an introduction to budgeting, including the purposes of budgets and the critique towards budgeting. This critique has led to the need of a management tool that addresses the weaknesses of the budget. Rolling forecast is therefore presented as an alternative management tool. This part of the literature review presents how the rolling forecast is used, and the strengths and weaknesses of the management tool.

The theoretical framework for this thesis is presented below. Through this framework the study investigates how uncertainty, technology and financial position are drivers affecting the purpose and design of rolling forecasts. After reviewing the literature these drivers seem to affect the rolling forecast in different ways. Uncertainty increases the need for rolling forecasts for companies being subject to rapid changes in the environment. Technology seems to both support and enable the forecasting process making it more efficient. When the need for rolling forecasts increases, this might increase the demand for technology. Lastly, a weaker financial position gives external pressure, making management control more important. In addition, this external pressure seems to result in tighter budgetary control, and therefore also affects the use of budgets.

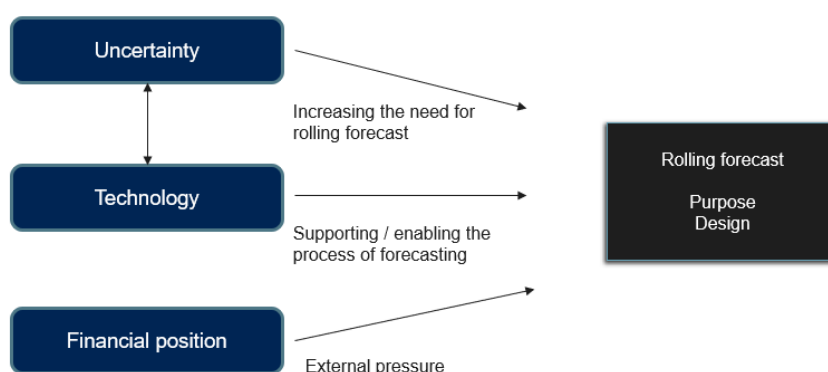


Figure 1: Theoretical framework

Budgets were originally legal public documents, used to control public expenditures (Bergstrand, Bjørnenak & Boye, 1999; Bergstrand, 2009). Tanlu (2007) describes the budget as a projection of revenues, expenses, profits and cash flows for the forthcoming accounting period. There exist different types of budgets, where the most common one is fixed for 12 months and is used for several purposes at once. A rolling budget is a variant where the budget is periodically updated to maintain a constant forward-looking time horizon (Hansen, 2010). Another variant is the use of different budget levels for different purposes (Arnold & Artz, 2019)

According to Zeller & Metzger (2013) the budget is a financial plan that supports a specified target. The authors describe how valuable time is dedicated for analyzing budget variances in order to learn and give feedback. Lorain, Domonte & Peláez (2015) emphasize that budgeting is an important part of the management control system. The reason for this is that budgeting is the process more profoundly rooted in the organizational structures, and it is the one system covering all organizational areas of a company.

2.1.1 Role of the budget

A review of the literature shows that the budget serves several different roles in companies. Table 1 shows how there are different roles assigned to the budget, and that researchers emphasize different roles.

Function	Reference
Planning	Hansen et al. 2003; Barrett & Fraser 1977; Samuelson 1986
Evaluation	Barrett & Fraser 1977; Samuelson 1986
Motivation	Barrett & Fraser 1977; Samuelson 1986
Coordination	Hansen et al. 2003; Barrett & Fraser 1977; Samuelson 1986
Budget management	Samuelson 1986
Commitment	Samuelson 1986

Table 1: Traditional roles of budgets (adapted from Lorain et al., 2015, p. 68)

Hansen et al. (2003) emphasize that the budget provides a comprehensive plan for the organization that coordinate all the various areas of a company. Further, performance planning and ex post evaluation comparing actual and budgeted results are important purposes of the budget (Hansen et al., 2003). Samuelson (1986) emphasize that there are four main roles of budgeting, where each is divided into sub roles. The two main roles most commonly discussed in the literature are planning and responsibility control. Planning also include coordination and feedback control, while responsibility control includes commitment and evaluation. Barrett & Fraser (1977) emphasize three major roles of budgets, which are planning, motivation and evaluation, as well as two minor roles which are coordination and education. The following sections describe the three major roles highlighted by Barrett & Fraser (1977).

Planning

Budgeting ensures that companies have a plan for their total activities during the upcoming accounting period (Bergstrand, 2009). This gives management a complete overview and decision makers can secure that the company is moving in the right direction. Tanlu (2007) describes that the budget is often considered the main management system for planning. Budgeting should provide reliable information to anticipate the future, and the budgeting process puts the present and future into perspective (Lorain et al., 2015). This is required in order to ensure an efficient planning process, which means that the company has an organized and structured way to reach their strategic goals. Through the planning process management can explore the behavior of cost and revenue under a specific set of assumptions (Barrett & Fraser, 1977). The budgeting process aims to clarify a company's available resources and ensures that the company use scarce resources optimally when allocating them (Hoff, 1999).

Motivation

Motivation is another purpose of the budget emphasized by both Lorain et al. (2015) and Barrett & Fraser (1977). Barrett & Fraser (1977) describe how motivation can be divided into two elements that is crucial to motivate managers to work towards the company's overall objective. These elements are direction and strength. The budgets give managers direction since each manager ends up with a specific target that their department or region should aim towards. The purpose of the strength element is to commit managers to work towards these targets. A common technique to achieve commitment is linking performance

evaluation of managers to the company's incentive system, which evolves around bonus compensation and upward mobility. Nevertheless, a company can experience environmental uncertainty and times of crises. This may result in the targets set in the budget being hard to achieve, thereby causing discouragement among managers since there is a correlation between motivation and feasibility of targets (Lorain et al., 2015). Setting ambitious, yet achievable targets increases motivation and employee commitment (Horngren, Datar & Rajan, 2015; Tanlu, 2007).

Evaluation

Further, the budget serves as a tool for evaluation and control purposes. By comparing the budget with realized results, variances can be detected, analyzed and acted upon (Tanlu, 2007). Variance analysis is the process that specifies the reasons why actual profits differ from the expected or planned level of profits in any given period (Shank & Churchill, 1977). In variance analysis it is important to consider separately the profits impact of sales-activity variances, which is volume variances, and cost/price related variances (Shank & Churchill, 1977).

The budget is based on specified assumptions which can evolve around the overall economic development, assumptions about exchange rates or national wage or tax provisions (Bergstrand et al., 1999). Changes in these assumptions must be analyzed when comparing the budget to realized results (Bergstrand et al., 1999). Bruns & Waterhouse (1975) stresses that using budgets for control purposes depends on the ability to plan with a rather high degree of certainty. According to Barrett & Fraser (1977) the budget will give a standard that manager's and business unit's actual results can be measured against. Tanlu (2007) describes how it is common to use budget-based compensation contracts where managers are given a bonus if the performance threshold is reached or surpassed, which is based on a budget line item.

2.1.2 Critique to the budget

Despite the fact that the budget is commonly used as a management tool, it has been a subject of criticism for decades. Already in the 1970s Jan Wallander, the CEO of Svenska Handelsbanken, abandoned the traditional budget (Wallander, 1999; Bogsnes, 2016). In the 1980s the criticism of the budget was led by academics and concerned the way budgets was

used (Johnson & Kaplan, 1987). Recently, practitioners have criticized the budget for being fundamentally flawed (Hope & Fraser, 2003). They claim, among other things, that the budgeting process is very time- and resource consuming, has several purposes that can be in conflict with each other, and impede companies from being adaptive and flexible in changing and unpredictable environments (Bogsnes, 2016; Kaarbøe, Gooderham & Nørreklit, 2013; Hope & Fraser, 2003).

Time and resources

According to critics, one of the most common disadvantages of budgeting is the enormous amount of time and resources spent on it (Bogsnes, 2016; Bergstrand, 2009; Hope & Fraser, 2003). Further they claim that there is tendency for the budget to grow beyond the point where it starts losing efficiency. However, researchers disagree on this criticism. Hope & Fraser (2003) state that the budgeting process absorbs up to 20 to 30 percent of senior executives and financial managers time, and that the average time spent on the process is between four and five months. Libby & Lindsey (2010) find in their study of North American firms that the average time spent on budgeting is considerably less than what critics suggest. According to their study 6 to 8 percent of the average manager's time is spent on budgeting related tasks, and the median time spent for a business unit to complete the budgeting process is 4 weeks.

Several purposes

The budget is further criticized for having several purposes that are very often in conflict with each other. Bogsnes (2016) states that “forcing a target and a forecast into being one number in one process is almost always guaranteed to result in either a bad target or a bad forecast or both” (p. 51). Another conflict Bogsnes (2016) mentions is when managers of the business units are the ones who both prepare the budgets and later get evaluated on their performance based on budget targets. This could lead to lower budgeted numbers than what is optimal. However, Arnold & Artz (2019) show that many companies adjust budgets differently for different purposes during the year. The majority of companies in their sample use a single budget at the beginning of the year, while they separate budgets for planning and performance evaluation at the end of the year. Arnold & Artz (2019) state that “in budgeting, setting a performance evaluation budget that deviates from the budget level the firm uses to plan its activities may invoke questions for the manager as to how credible the budgets are, thereby reducing the manager's motivation” (p. 54). The companies therefore have to trade

off costs arising from the conflict of purposes and costs associated with motivation loss plus the additional fixed costs of setting up separate budgets.

Calendar rhythm and underlying assumptions

Budgeting has also been criticized for being inappropriate in uncertain environments because it ties the company to a 12-month fixed performance contract (Lorain, 2010). Critics claim that it is too static and rigid, and that the assumptions underlying the budget will quickly become outdated in unpredictable environments (Hansen et al., 2003; Kaarbøe et al., 2013). According to this critique, budgets prevent companies to respond and adapt to changes in the environment in an agile way. However, according to Libby & Lindsey (2010) companies often adopt processes to obtain new resources outside of the budgeting process or allow some type of budget revision during the year in order to deal with unforeseen situations. Chenhall (2003) also stresses that successful companies using budgets in uncertain environments combine this with open, flexible and informal communication between managers.

Centralization and control-and-command

Another criticism of budgeting is that it creates a vertical control-and-command environment and centralizes decision-making within a company (Hansen et al., 2003; Hope & Fraser, 2003). This might prevent quickly response on changing customer needs and can stifle initiatives and value creation. Kaarbøe et al. (2013) stresses that the traditional control-and-command management is less feasible in a turbulent environment, and that it is critical that the employees become more self-regulated.

In spite the recent criticism of the budget from several practitioners, studies reveal that the budget is still a common and useful management tool in most companies (Valuckas, 2016; Libby & Lindsey, 2010; Bjørnenak & Kaarbøe, 2011). Libby & Lindsey (2010) find that the majority of companies within their study perceive budgeting to be value-adding and will continue to use budgets for control purposes. Rather than abandoning budgets altogether, the study reveals that companies are adapting their use to account for problems with the budget. A study of Norwegian practice also finds that the budget on average seems to be more helpful than harmful (Valuckas, 2016). However, the respondents' perceived budget problems have different effects on the overall budget value. The study reveals that the lack of responsiveness to changes in the environment are one of the main value-reducing drivers,

while the budget's consumption of time and resources, lack of focus on value creating activities, and encouraged dysfunctional behavior do not appear to affect the value of budgeting.

2.2 Rolling Forecast

The critique towards the budget led to the need of a management tool that addresses the budget's weaknesses. Bergstrand (2009) describes how the alternative planning tool should give reduced amount of work, increased accuracy of information and have no end-periods. A management tool that holds these properties is rolling forecast (Bergstrand, 2009).

Environmental uncertainty is an important factor regarding the concerns about the budget. According to a study conducted by Lorain (2010), 60 % of the respondents considered it difficult to establish accurate budgets due to changes in the environment. Implementing rolling forecasts will provide companies with frequently updated indicators, which results in more adaptable and flexible companies that are able to cope with new environmental scenarios (Lorain, 2010).

2.2.1 What is a rolling forecast?

A rolling forecast is a financial model predicting the future performance for a company based on historical and current data, over a continuous period. In a rolling forecast, parts of each period will be included in the following period without any evident breaking point (Bergstrand, 2009). Lorain (2010) emphasizes that “rolling forecast provide an actualized vision of the business that permits to continuously maintain the link between plans and strategy, to allocate resources appropriately, to forecast accurate cash flows, to obtain useful information for the decision-making process and to react rapidly to environmental changes” (p. 182).

Level of details in forecasting

Rolling forecast was introduced as an aggregated estimate on a chosen set of parameters, which is updated on a rolling basis (Bjørnenak, 2014; Bergstrand, 2009). It should therefore be less detailed than the budget and take less time to prepare (Bergstrand, 2009). According to Montgomery (2002) the forecast should be prepared at a summarized level of detail to

provide more meaningful information. Minimizing the number of monthly variances to be detected and explained reduces the effort and complexity of the forecast. The forecast should provide vision and direction instead of becoming a “re-budget” prepared during the year. However, the level of details in forecasts varies across companies. In a research study conducted by Bjørnenak (2014), several business controllers in a large Norwegian company stated that rolling forecasts developed towards being budgets prepared four times per year. This was because more details were included in the forecast to enable controllers to explain variances between forecasted and actual outcomes.

Different ways of using the rolling forecast

A review of the literatures shows that it is not one clear way of using rolling forecast as a management tool. Henttu-Aho’s (2018) study reveals that there are different ways that the rolling forecast is implemented in companies.

In some companies the role of forecasting and budgeting overlaps (Henttu-Aho, 2018). This results in ‘re-budgeting’ or rolling budgets where continuous forecasting updates the budget, and through this process targets are frequently updated (Haka & Krishnan, 2005). According to Haka & Krishnan (2005) the updating and forecasting features of the rolling budget help increase decision-makers learning in uncertain environments. Targets are less clear with this use of rolling forecasts as targets are frequently updated. However, if the uncertainty is high, learning for decision-makers are considered more important and outweighs the disadvantage of the unclarity in targets (Haka & Krishnan, 2005).

The rolling forecast can also be a part of a hybrid system where it supports the planning and control functions of annual budgeting (Henttu-Aho, 2018). By using rolling forecasts to assist the annual budget control function, common bases of criticism are reduced (Sivabalan, Booth, Malmi & Brown, 2009). Finally, Henttu-Aho (2018) describes that in companies where the annual budget is abandoned, rolling forecast is a key part of planning. Such companies use the management model called Beyond Budgeting, where target-setting is separated from the planning process (Henttu-Aho, 2018).

Periodicity of forecasting

Rolling forecasts can be prepared at a monthly or quarterly basis, but the periodicity might also be driven by significant events (Lorain, 2010). An important feature of a rolling forecast

is that it has a consistent forecast horizon, independent of when the forecast is made (Morlidge & Player, 2010). After a month or quarter ends, it is dropped from the forecast and the next month or quarter is added to the end of the forecast (Leon, Rafferty & Herschel, 2012).

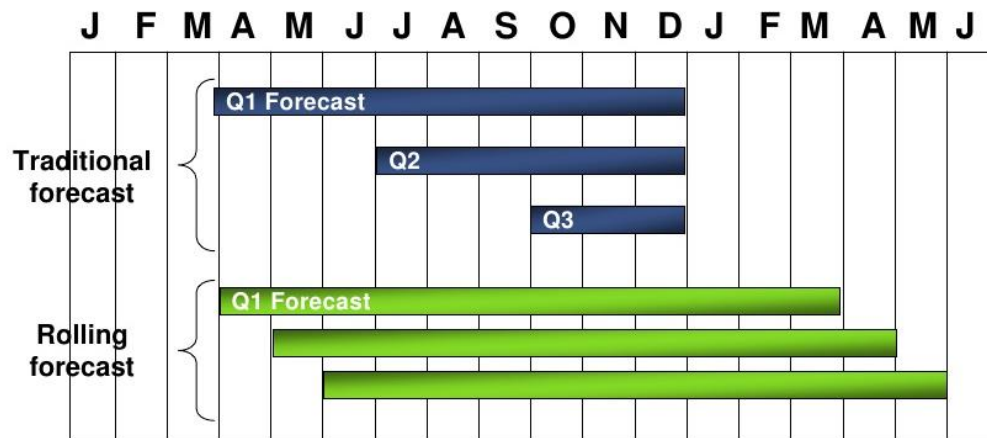


Figure 2: Rolling forecast vs. traditional forecast (Hope & Player, 2012, p. 306)

Continuous planning

The rolling forecast can be compared to a compass which shows the company's financial course (Zeller & Metzger, 2013). Forecasting is important since companies need to make informed decisions, and it will lead to continuous revision of plans (Morlidge & Player, 2010). The authors describe that when forecasting, companies must estimate the impact of external events and the predicted outcomes of actions the company has already committed. Further, the likely impact of actions not yet executed, in other words the companies' plans, must be estimated. The result of the process is a financial estimate with expected future outcomes based on current assumptions and economic forecast of the environment and the companies' plans.

Rolling forecast is a tool for continuous financial planning focusing on maintaining the company's strategy (Lorain, 2010). Lorain (2010) describes how there are several purposes of such continuous financial planning. Rolling forecasts are used to adjust action plans after considering market changes and financial and economic risk. Further, an important purpose is to ensure optimal allocation of operational and financial resources in the company where resources can be allocated or withheld efficiently. Also, a purpose is to help management

meet shareholder requirement and expectations regarding for example profitability and value creation. Continuous financial planning can also give continuity and sustainable growth for the company.

Solving the problem of unnecessary spending at the end of the year

Before rolling forecast was introduced, the forecast covered the remainder of the budget year (Bergstrand, 2009). Although the forecast would be more accurate and liable compared to the budget, it would not solve the end-of-period problems as the forecast had a definite end period (Bergstrand, 2009). These problems evolve around the promotion of unnecessary spending at the end of the period which results in waste of resources (Bergstrand, 2009). Rolling forecasts covers the need of more frequently updated information about the end of the planning period (Hope & Fraser, 2003). With the use of rolling forecast, the forecast end period is constantly projected forward (Leon et al., 2012). Thus, rolling forecast eliminates the end-of-period problems (Bergstrand, 2009).

2.2.2 Strengths and weaknesses of rolling forecasts

Strengths

According to Bergstrand (2009) there are several strengths related to rolling forecasts. When forecasting it is not necessary for the involved to gather at the same time to do their planning. Each manager can do their planning when there is time, and coordinate with colleagues when it is necessary (Bergstrand, 2009). Second, companies must adjust to environmental changes, and rolling forecasts is a navigational tool to adjust to such changes more quickly (Bergstrand, 2009; Zeller & Metzger, 2013). Using rolling forecasts may help companies maximize resource utilization as resources can be reallocated to adjust to environmental changes (Leon et al., 2012). Third, by using rolling forecasts companies get a better foresight towards the end of the year. Rolling forecasts constantly project the end period forward (Leon et al., 2012), which solves the end-period-problem. Forth, planning will become more realistic when using rolling forecasts.

Weaknesses

Despite the strengths of using rolling forecasts, some weaknesses are addressed in the literature. Bergstrand (2009) highlights that the total workload of planning may increase since forecasting is done several times a year. There is further a chance that the rolling

forecast becomes too detailed, which can reduce the quality of the forecast while increasing the workload of forecasting (Bjørnenak, 2014). Bjørnenak (2014) emphasizes that large companies need advanced forecasting models, but that they should not become too complicated. Precision and relevance are guiding principles, hence including insignificant details can decrease forecast precision. Further, rolling forecasts can create uncertainty among managers as the forecast is constantly changed (Ekholm & Wallin, 2000).

Drive-based planning is important to utilize the advantages of rolling forecasts (Leon et al., 2012). Leon et al. (2012) describe how “the objective is to focus on the planning process on those activities that drive business performance and focus on variables that can be controlled” (p. 8). But it is difficult to identify the necessary operational drivers and understand the assumptions related to these drivers. Another weakness is that it may become more difficult to follow up managers decisions (Bergstrand, 2009). Rolling forecasts serves as a tool for managers to adjust to environmental changes, which results in plans changing more frequently thereby making follow-up more difficult.

2.3 Differences Between Budgeting and Forecasting

According to Morlidge & Player (2010), forecasting and budgeting have different purposes. When budgeting the company set targets regarding desired results for the upcoming accounting period. The budget serves as a plan that should help the company hit these targets. Budgets is essentially a target which shows where the company would like to be in a year. Further, the budget is commonly used for performance evaluation (Barrett & Fraser, 1977). The forecast is not a target but shows where the company is heading based on current assumptions (Morlidge & Player, 2010). Forecasting gives updated information used for decision-making and to allocate resources appropriately (Lorain, 2010).

The forecast help companies adjust to the reality as soon as there is an understanding of what is going on (Bergstrand, 2009). To secure shareholder value companies must act and react to environmental changes (Zeller & Metzger, 2013). The authors describe how the rolling forecast serves as a navigational tool. In contrary, the budget represents fixed targets. Variances between the budget and actual results will be detected, analyzed and acted upon (Tanlu, 2007). When managing a company only based on the budget, decisions will be made

to hit annual budget targets (Zeller & Metzger, 2013). This is a fundamental difference between budgeting and forecasting.

According to Zeller & Metzger (2013) budgeting and forecasting guide different styles of leadership. Traditional budgeting promote leadership based on command and control. This in order to focus on moving the company towards hitting budget targets. The authors state that “traditional budgeting puts binoculars in decision makers’ hands, looking where the ship has been” (p. 300). On the other hand, rolling forecast promotes proactive leadership. Morlidge & Player (2010) describe that when a company sets sails towards budgeted targets, unexpected winds and currents push the company off course. Challenging competitors and new business opportunities may rise unexpectedly. Thereby, leadership must focus on decisions upon likely future outcomes.

Further, there is a difference regarding the amount of time and resources it takes to prepare a budget and a rolling forecast. Like earlier addressed, rolling forecasts was introduced as an aggregated estimate on a chosen set of parameters, which is updated on a rolling basis (Bjørnenak, 2014; Bergstrand, 2009). Therefore, it should be less detailed than the budget and take less time to prepare (Bergstrand, 2009).

	Budgeting	Forecasting
Main purposes	Target setting and performance evaluation	Give updated information to guide decision-making and allocate resources appropriately
Time of preparation	Concentrated near year end	Executed throughout the year, often quarterly or monthly
Level of detail	High	Low
Time- horizon	Next fiscal year (12 months)	Normally 12- 18 months
Content	Detailed overview of revenues and expenses	Predicted key variables, but might be more detailed in some companies
Process	Takes up more time and resources in the company	Should take less time and resources to prepare

Table 2: Summary of the differences between the budget and rolling

2.4 Drivers Affecting the Role of Budgets and Rolling Forecasts

There are different drivers affecting the design and use of management tools in a company (Chenhall, 2003; Andreassen & Bjørnenak, 2018). Uncertainty and a company's financial position are both important drivers that affect the design and use of budgets and rolling forecasts (Sandelgaard, 2013; Bourmistrov & Kaarbøe, 2017). Digitalization has traditionally been seen as a supporting factor for change, more than a driver of change (Andreassen & Bjørnenak, 2018). The access to Big Data combined with new analysis systems could also be drivers for changes in the management tools.

2.4.1 Uncertainty

According to Chenhall (2003) uncertainty defines "situations in which probabilities cannot be attached and even the elements of the environment may not be predictable" (p. 137). In contingency-based research, environmental uncertainty has been an important variable that affects organizational design and management control systems (Andreassen & Bjørnenak, 2018). Sandelgaard (2013) stresses that it is not the *actual* uncertainty, but the *perception* of uncertainty of those able to affect the decision making that is important. Uncertainty can be divided into two dimensions; increased (global) competition, and an unpredictable future (Sandelgaard, 2013; Andreassen & Bjørnenak, 2018).

Unpredictability

According to Bergstrand (2009) companies facing uncertainty due to an unpredictable future will have difficulties using budget as a planning- and target setting tool. Wallander (1999) argues that the assumptions underlying the budget in such environments will quickly become obsolete and irrelevant. A research study by Sandelgaard (2013) reveals that there is a highly significant, negative relationship between the degree of unpredictability and the use of budgets for performance evaluation. Unrealistic target setting due to lack of information about the future will result in difficulties making managers responsible for budget deviations (Andreassen & Bjørnenak, 2018). According to Bergstrand (2009) the budget should in such circumstances be replaced or supplemented by rolling forecast as a planning tool, and the performance evaluation should be disconnected from the budget.

Competition

In a situation where the competition is low, companies are often able to cover the losses from unprofitable products and projects by using resources from profitable ones (Andreassen & Bjørnenak, 2018). However, when the competition is high, companies cannot afford to make major mistakes and must hold a level of efficiency that is not substantially lower than its competitors (Pfeffer & Leblebici, 1973). Pfeffer & Leblebici (1973) stresses that the need for coordination and control increases when companies face higher competition.

According to empirical studies, a higher degree of competition is related to greater use of budgets for planning purposes, communication of goals and strategy formation (Sandelgaard, 2013; Hansen & Van der Stede, 2004). The relationship between the degree of competition and the use of budgets as performance evaluation is however disagreeable. Hansen & Van der Stede (2004) find a negative relationship between competition and the purpose of performance evaluation, while Sandelgaard (2013) finds no significant relationship.

According to these research studies, increased competition should therefore indicate more use of budgets as a planning, communication and strategy formation tool, and unchanged or less use of budgets as a performance evaluation tool. However, the two dimensions of uncertainty is not independent of each other (Andreassen & Bjørnenak, 2018). Increased competition often leads to less predictability since the competitors' actions affect each other. Therefore, competition in a market gives ambiguous effects on the use of budgets and rolling forecasts.

Bergstrand (2009) illustrates in figure 3 how a company's freedom of action and perceived uncertainty can affect their choice of planning- and control tools. Flexibility is the degree to which companies are able to adjust their production and costs when circumstances change. Bergstrand's (2009) model argues that when perceived uncertainty is low, companies should use budgets as management control tool. When perceived uncertainty increases, companies should reduce the time horizon of their planning, and implement rolling forecasts. In a situation where both uncertainty and the flexibility are low, annual- and long-term budgets should be used because costs and resources are fixed on a short-term basis.

According to Bergstrand's (2009) model there are no simple solution at finding a proper management tool if a company face high perceived environmental uncertainty and low flexibility at the same time. The company then need to find ways to become more dynamic (Andreassen & Bjørnenak, 2018).

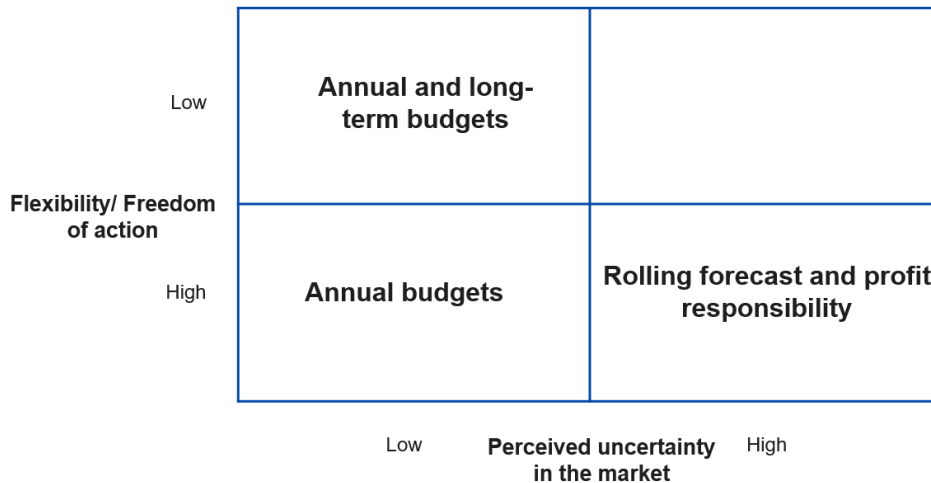


Figure 3: Uncertainty and flexibility (Bergstrand, 2009, s. 180)

2.4.2 Financial position

Another variable that can affect the role of the budget and the rolling forecast is a company's financial position when affected by challenging market conditions (Bourmistrov & Kaarbøe, 2017). Under such external pressure companies tend to tighten control and get more centralized and standardized (Khandwalla, 1978). A research study conducted by Bourmistrov & Kaarbøe (2017) finds that their case company tightened the budgetary control by top managers, and that this was a result of investors, creditors and owners demanding improved short-term financial results and corresponding cost-cuts. This finding is partial in line with Becker et al. (2016) who find that in times of global economic downturns the importance of budgeting for planning and resource allocation increases, while the use of budgets for performance evaluation decreases. The dismissed usefulness of budgets as a performance evaluation tool they find to be because of difficulty in identifying realistic goals. In addition, Becker et al. (2016) reveals that almost all the companies in their study increased their planning by either introducing a rolling forecast or by increasing its frequency and level of detail if a forecast process was already implemented.

In spite the tendency to tighten budgetary control, research show that it is important for companies facing a challenging market condition to pay more attention to external information (Bourmistrov & Kaarbøe, 2017). According to Bogsnes (2016) companies risk reducing their flexibility, agility and dynamics when addressing a challenging market situation by tightening the control. This can take managerial attention away from emerging opportunities (Bogsnes, 2016). Thus, to be effective, companies need to balance attention to tight controls with more open, informal and flexible information and communication systems (Chenhall, 2003).

2.4.3 Digitalization

Digital technology can be used by companies to improve the forecasting process, which is referred to as digitalization. In the literature, digitalization is defined in several ways emphasizing different aspects. According to Iden (2018), digitalization is the use of digital technology to change processes in order to make it more efficient. It can also be the use of computers to execute individual activities on behalf of humans, without changing the design of the process. This is called automation (Iden, 2018). Fichman, Dos Santos & Zheng (2014) define digitalization as “the practice of taking processes, content or objects that used to be primarily (or entirely) physical or analog and transforming them to be primarily (or entirely) digital” (p. 133). A definition by Nwankpa & Roumanis (2016) emphasizes the use of newer digital technology. They define digitalization as “an organizational shift to big data, analytics, cloud, mobile and social media platforms” (p. 2).

There have been different waves of digitalization (Kaarbøe et al., 2018). In the early 2000s ERP (Enterprise Resource Planning) systems and CRM (Customer Relationship Management) systems were introduced. These made it possible to automate the process of gathering and systemizing data, and hence support the use of rolling forecasts. The latest wave that we are entering now, is the use of more and different types of data. Companies can utilize this in their rolling forecast through prediction models. These can be drivers that enable the use of rolling forecasts.

Enterprise Resource Planning (ERP)

An ERP system links all areas of a company into a tightly integrated system with shared data and visibility (Chen, 2001). A study of Finnish companies, with experience of using

integrated information systems, finds that ERP have some implications for enhanced forecasting (Granlund & Malmi, 2002). It can lead to more accurate forecasts and enables a globally use. According to Davenport (1998), ERP systems can have different impact on companies using it. On the one hand, by giving broader access to financial and operating information the company can be more flexible and creative. On the other hand, using ERP systems involve standardization of processes which make them more efficient. Moreover, it leads to centralization of control over information, which is more consistent with a command-and-control environment.

Chen (2001) stresses that ERP systems can be complex, difficult to implement and expensive. Hong & Kim (2002) find that a company's fit of ERP is critical in explaining the success of implementing the ERP system. Companies that do not succeed often start their ERP implementation effort with automating tasks without understanding its business implications and simplifying or reengineering their processes (Chen, 2001).

Customer Relationship Management (CRM)

Chen & Popovich (2003) define CRM as "a combination of people, processes and technology that seeks to understand a company's customers" (p. 672). According to Aaker, Kumar, Day & Leone (2010) CRM refers to the practice of collecting, storing, and analyzing customer-level information. This also involves automating and enhancing core business processes such as the finance function (Kumar & Petersen, 2012). Boyle (2004) stresses that analyzes of the gathered data can be used to forecasting trends and the company's revenues.

Prediction models

While ERP systems only reflect on what has already happened, new digital technology enables decision making based on what is happening or will happen in the future (Babu & Sastry, 2014). Today companies have access to *Big Data*, which is larger amounts, types, and more frequently updated data (Gandomi & Haider, 2014). Big Data is, however, worthless in a vacuum. To enable better decision making out of Big Data, companies must use data management and analytics (Gandomi & Haider, 2014). Data management is technologies and processes that acquire, store and prepare data for analysis. Analytics are techniques used to analyze and acquire intelligence from Big Data. One of the tools available for Big Data Analytics is predictive analytics, which uses a variety of techniques from data mining, modeling, statistics, machine learning and AI to predict future outcomes based on

current and historical data (Gandomi & Haider, 2014; Babu & Sastry, 2014). Predictive analytics seek to capture relationships in data and uncover patterns. According to Gandomi & Haider (2014) predictive analytics can be used to a range of different disciplines “from predicting the failure of jet engines based on the stream of data from several thousand sensors, to predicting customers next moves based on what they buy, when they buy and even what they say on social media” (p. 143). In terms of forecasting, companies can utilize prediction as input data in the rolling forecast. Thus, prediction models where predictive analytics is used on big data support and enable the transition from budgets to rolling forecasts (Andreassen & Bjørnenak, 2018; Gandomi & Haider, 2014).

2.5 Summary of Literature Review

The budget serves several different roles in companies, where different researchers emphasize different roles. Through budgeting the company ensures that they have a plan for the total activity for the upcoming fiscal year. The budget is also a tool for evaluation and control purposes. However, the budget has been subject for criticism for decades, which has led to the need of a management tool addressing the budget’s weaknesses. Rolling forecast is a management tool used to either supplement or replace the budget as there are different ways to use this tool. The rolling forecast is a tool for continuous financial planning which focus on maintaining the company’s strategy. Through the use of rolling forecast the company can adjust their actions plan according to market changes and financial and economic risk.

There are different drivers which affect the design and use of management tools in companies. As the world has become more dynamic, environmental uncertainty is an important driver affecting the design and use of rolling forecasts. Further, digitalization has traditionally been a supporting factor for change, more than a driver. However, access to big data and new analysis systems could be drivers for changes in the design and use of management tools.

3. Methodology & Research Design

The purpose of this chapter is to explain the process of conducting our study and the choices made regarding methods of collecting and analyzing data. First, we describe the research design including purpose of the research and research strategy. Further, we describe the process of collecting and analyzing the data. Finally, we discuss the credibility, dependability, confirmability and transferability of the research.

3.1 Research Design

The research design is a framework for how the research should be carried out from beginning to end (Johannesen, Tufte & Christoffersen; Ghauri & Grønhaug, 2005). It should ensure that the problem statement is related to relevant and practicable empirical research (Ghauri & Grønhaug, 2005). The research design “guides the investigator as he or she collects, analyzes, and interprets observations” (Frankfort-Nachmias & Nachmias, 2008, p. 88). Ethical issues and constraints put on the researcher, for example time, money and access to data, should be discussed in the research design (Ghauri & Grønhaug, 2005; Saunders, Lewis & Thornhill, 2016).

The problem statement is what drives the process of the research and how the study should be designed (Johannesen et al., 2010). The problem statement previously outlined is:

Why do companies use rolling forecasts, and how is forecasting used as a management tool?

3.1.1 Purpose of the research

According to Saunders et al. (2016) the classification of research purpose is fourfold: exploratory, descriptive, explanatory and evaluative research. A research can be designed to fulfil one of the purposes or a combination of these, and the purpose can change over time (Saunders et al., 2016). Further, deciding on research purpose is dependent on how the problem statement is asked.

An exploratory study is particularly useful for clarifying the understanding of an issue, phenomenon or problem, for example if there is uncertainty of its precise nature (Saunders et

al., 2016). Advantages when conducting an exploratory study is its flexibility and adaptability to change. The researcher should be willing to change direction when new data and insight occurs (Saunders et al., 2016). When the desire is to achieve an accurate profile of events, persons or situations, descriptive research is the adequate approach (Saunders et al., 2016). Saunders et al. (2016) emphasize the necessity to gain a clear picture of the phenomenon prior to the collection of data. Often, research utilize description to be a precursor to explanation. Such studies are known as description- explanatory studies (Saunders et al., 2016).

The purpose of an explanatory research is to explain relationships between variables when studying a problem or situation (Saunders et al., 2016). Such studies aim to establish causal relationships between variables. Evaluative research's purpose is to decide how well something works (Saunders et al., 2016). Saunders et al. (2016) describe how "an evaluative study may produce theoretical contribution where emphasis is placed on understanding not only 'how effective' something is, but also 'why', and then comparing this explanation to existing theory" (p. 176).

The purpose of our research is to study why and how the rolling forecast is used in our case company. Specifically, the research focus on drivers that can affect the use of rolling forecasts in the company. This research is descriptive as it intent to describe the current use of the rolling forecast in the company. However, there is little research on the subject and the use of rolling forecasts is not clear in the literature. The study therefore also includes elements of an exploratory study as we seek to gain new insight on the use of rolling forecasts in a context where a company is subject to varying uncertainty and market fluctuations.

3.1.2 Research strategy

A research strategy is a plan for how the problem statement will be answered (Saunders et al., 2016). When deciding on the research strategy there are several concerns to consider. The strategy should be directed by the problem statement and the purpose of the research, which must be coherent with available time and resources, assessment of data sources, the researcher's existing knowledge and the research philosophy (Saunders et al., 2016).

The chosen strategy for this research is a case study approach. A case study can be defined as in-depth inquiry into a topic within a real-life setting (Yin, 2009). The purpose of case studies is achieving an understanding and in-depth insight to professional practice, policy development and community or social action (Bloomberg & Volpe, 2019). Bloomberg & Volpe (2019) refer to case studies as an exploratory form of inquiry where there is significant interaction with research participants to provide an in-depth picture of the unit of study. According to Yin (2014) “how” and “why” questions are likely to favor the use of case studies. In case studies, data collection and analysis should be guided by the researcher’s prior development of theoretical propositions (Yin, 2014). Further, findings should be tied to existing literature on the subject, where existing theory can either be kept, modified, further developed or a new theory proposed (Yin, 2014). Our problem statement consists of “how” and “why” questions, and the theoretical framework and literature review guide the data collection and analysis. Using a case study approach is therefore appropriate for answering our problem statement.

Yin (2014) describes how there are two discrete dimensions of a case study. The first dimension concerns the number of objects involved in the research. In a single case study only one object is being studied. But when there is a desire to focus on whether findings are replicable across several cases, a multiple case study should be used. The second dimension is based on whether a holistic case or an embedded case is chosen, which refers to the unit of analysis. A holistic case study is when the research is concerned around the case object as a whole, for example a company. Therefore, holistic cases have one unit of analysis. If the research involves more than one unit of analysis, for example when researching different units within a company, it is an embedded case.

We have chosen to use a single case approach, where OffCo is the object being studied. As our study is both descriptive and exploratory, using a single case allows us to gain in-depth knowledge and descriptions of one company rather than doing surface research in several companies. By going in-depth in OffCo we hope to gain a better understanding on the role of rolling forecasts under a high degree of uncertainty. Further, the constraints regarding time and resources also favors using a single case. To gain deeper knowledge, broader perspective and different information and views on the case, we have chosen several units of analysis within the object of study. Thereby, the study uses an embedded approach. We focus on understanding the perspectives from both corporate and the regions in the company,

represented mainly by one of the regions within the company. Further, we also focus on getting the views from the users of the rolling forecast and the budget (management), as well as the employees working hands-on in the process of preparing forecasts and budgets (business controllers e.g.). We were given broad access to the company. This contributes to cope with the potential vulnerability that the case may turn out not to be the case it was thought to be. Yin (2014) therefore recommends maximizing access to collect data and a careful investigation in order to minimize misrepresentation.

3.2 Data Collection

In this section we will explain the choices of methods used for collecting the data needed to answer our problem statement. This includes the choice of using a qualitative method and collecting primary data through semi-structured interviews. We also describe how the respondents for our interviews are selected, the choice of sample size, and how the interviews are conducted. In the last part of this section we describe how the interviews are transcribed and the program used for coding the interviews, QDA Miner Lite.

3.2.1 Data collection method

Collecting of data for research purposes can be accomplished either by a qualitative method or a quantitative method (Johannessen et al., 2010). According to Dalland (2012), a quantitative method is used to get broader knowledge and involves collecting numerical data to find causalities and test hypotheses. A qualitative method is used to get an in-depth understanding of opinions, perspectives and experiences that cannot be quantified (Dalland, 2012).

Both qualitative and quantitative methods contribute in different ways to a better understanding of how institutions, groups and individuals in our society act and interact (Dalland, 2012). The choice of method is dependent of both what is considered to be the ideal procedure for the problem statement and what is practically feasible (Dalland, 2012). We choose to use a qualitative method in order to get an in-depth understanding of the use of rolling forecasts and budgets in a specific context. While there exist quantitative research studies of similar topics, a qualitative method is best fitted when conducting descriptive and exploratory research.

3.2.2 Qualitative research

According to Johannessen, Tufte & Christoffersen (2005) there are mainly four different approaches of collecting qualitative data; observation, interviews, written documents, and pictures and audio files. These data can be differentiated between primary and secondary sources (Saunders et al., 2016). Observation and interviews are primary sources and have to be gathered by the researcher for that specific purpose, while written documents, pictures and audio files are secondary sources that already exist (Saunders et al., 2016).

In our study the data are mainly collected from qualitative research interviews in our case company, OffCo. The interviews are important because they capture the respondents' opinions and experiences. Observation and documents are used in addition to get a better understanding of the rolling forecast and budget processes in the company, but they are not used directly in the analysis. Before starting the interview process, we had a meeting with employees in the company that are involved in the processes of forecasting and budgeting. We then got an introduction to how the two processes are carried out. After the meeting the power point used during the presentation was sent to us. Later, we also received guidelines used internally for preparing the budget and the rolling forecast, and two of the monthly reports concerning performance evaluation on regional and group level. This information helped us get an understanding of the budget and forecasting process in the company, and it was used when preparing the interviews. After the interview process was finished, we also got to visit the company and observe while a part of the forecasting process was executed.

3.2.3 Qualitative interviews

Interview technique

There exist different types of qualitative interview techniques. A commonly used typology differentiates between structured interviews, semi-structured interviews and unstructured interviews (Saunders et al., 2016). Structured interviews are highly formalized with predetermined and standardized questions for each respondent. Semi-structured interviews are based on a predetermined interview guide including a list of themes and often some key questions. Unstructured interviews, also called in-depth interviews, are informal conversations used to explore in-depth a general area of interest without predetermined questions.

In this study, semi-structured interviews were used in order to get a balance between standardization and flexibility. An interview guideline was made in advance to structure the interviews and make sure the desired information was gathered. The guideline, including themes with corresponding questions, was based on the theoretical framework in chapter 2. Asking some standardized key questions allowed us to compare the responses afterwards. However, having some flexibility is important when doing descriptive and exploratory research. Using semi-structured interviews allowed us to ask follow-up questions where we wanted the respondents to explain, or build on, their answers. We also had the opportunity to change the structure of the interview and cut questions when necessary. The interview guideline was improved along the way in the interview process. We chose to not send out the interview guideline in advance to avoid the respondents searching up the “right” answers or discussing it with others.

Interviewer and interviewee bias

According to Saunders et al. (2016) the use of semi-structured interviews can give rise to biased data. The bias is mainly divided into two types; interviewer and interviewee bias. Interviewer bias is when comments, tone or nonverbal behavior of the interviewer affect the interviewee’s answer. Interviewee bias is when the researcher is not able to get access to the respondents that are best fitted for the purpose of the study. This could be because a respondent doesn’t have time to be interviewed or because the respondents chosen for the study are not the most relevant.

Before the interview process started, we read about how these biases could be reduced or avoided. When finding the proper selection of respondents for our study we had to decide which persons that would provide us with the information needed, and what would be a suitable sample size. To get an understanding of the different perspectives and opinions in the company, we made an interviewee list containing people in the company at different levels and with different roles. After talking with a contact person in the company, some people that were irrelevant for our study were taken out of the list, while some more relevant people were added. Our contact person then invited the suggested people on the list to join our study. By being approached by a trustworthy and known person, the willingness to participate in an interview may have been increased. The list of interviewees consisted of nine people who all agreed to be interviewed. We considered this to be a suitable sample size to provide us with information needed to answer our problem statement. In order to avoid

interviewer bias, we tried to not show our opinions through our feedback or body language during the interviews. We also tried to ask questions that were neutral and not leading them in a specific direction.

Interview process

To ensure that our study follow privacy policy and process personal data carefully, we notified The Data Protection Services (NSD) of our project in advance of the interview process. An information sheet including the purpose of our study, the problem statement and the respondent's rights and anonymity was sent to all the respondents. In the start of each interview, we reminded the respondent of the most important information and their rights. We also asked the respondent for consent to record the interview. The interviews were all conducted in English, but the respondents were presented with a choice to answer in their native tongue. English was preferred in order to transcribe the interviews verbatim without having to translate them. However, not having the interview in the respondent's native tongue could have been an obstacle for some of them. Still, we considered this not to have any significant effect on the answers, as English was the most common language spoken at the workplace. The interviews lasted between 30 minutes to 1 hour, depending on how much the respondent had to say. Two interviewers were present during the interviews, with one of the interviewers taking the leading role. All recordings of the interviews were transcribed shortly after they were completed. The interviews were transcribed verbatim to avoid that the researchers' interpretations affect the data. It also makes it possible to obtain useful quotes from the transcribed interviews (Saunders et al., 2016).

3.2.4 Analytical tool

QDA Miner Lite was the analytical tool used to code and analyze the data collected through the interviews. The transcribed interviews were first loaded into the program. In QDA Miner Lite we coded quotes, sentences or paragraphs for each transcribed interview. Through coding each transcribed interview one-by-one the coding structure was built up, and we ended up with a total of 116 codes. The codes were divided into main categories and subcategories. Several subcategories were divided into further subcategories. Our problem statement involves investigating why rolling forecasts are used in companies, and how the management tool is used. Therefore, we chose our two main categories to be *why use rolling forecast* and *how is rolling forecasts used*. Subcategories build on the literature review and

information received from the respondents. In chapter four, the budgeting and forecasting process is described based on among other the information obtained through the interviews. To get a better overview before describing these processes, we chose to use two other main categories called *empirics about budgeting* and *empirics about forecasting*. Using QDA Miner Lite made the process of code retrieving structured when analyzing the material further and finding useful quotes to support the analysis.

3.3 Evaluation

When reflecting upon the quality of a research, the criteria for qualitative and quantitative research differs (Bloomberg & Volpe, 2019). The authors emphasize validity and reliability as the standards most frequently used for evaluating quantitative research. If a research clearly reflects the world being described, it is valid. When a research is reliable, two researchers would find compatible observations if studying the same phenomenon. For qualitative research there is disagreement in the literature regarding which standards should be used for evaluating the research (Bloomberg & Volpe, 2019). Some researchers argue that the terminology from quantitative research could be used. Others are skeptical for using the same standards for both quantitative and qualitative research.

Lincoln and Guba (1985) argued for an alternative way to evaluate qualitative research. The authors were the first to argue that trustworthiness is central to ensure that qualitative research is significant and valuable (Bloomberg & Volpe, 2019). Lincoln and Guba (1985) use the terms credibility, dependability, confirmability and transferability to evaluate the trustworthiness of a study. We choose to use the terminology developed by Lincoln and Guba (1985) to evaluate the quality of our study.

3.3.1 Credibility

According to Johannesen, Christoffersen & Tufte (2011) credibility refers to the degree to which the researcher's process and findings reflect the purpose of the study and represent the reality. This refers to the ability to consider and explain complexities presented in a study and addressing patterns, themes and issues not necessarily easily understood (Bloomberg & Volpe, 2019). Lincoln & Guba (1985) present two techniques to increase a study's credibility. The first is devoting time to gain enough knowledge on the object of study. This

enables the researcher to distinguish between relevant and irrelevant information and gain trust. Another technique is to use different methods to collect data, for example using both interviews and observations.

Before collecting the data, we devoted time to gain knowledge about OffCo and the company's forecasting and budgeting process. This was achieved through meetings with the company representatives and online research. We also reviewed relevant literature on the field of study. Together, this enabled us to distinguish between relevant and irrelevant information. Further, all interviews were recorded and transcribed. Additionally, the interviews were anonymized so information and quotes cannot be traced back to the respondents. This may contribute to the respondents sharing their personal opinions to a larger extent, which leads to the findings reflecting the reality.

3.3.2 Dependability

Bloomberg & Volpe (2019) state that “dependability refers to the stability and consistency of data over time” (p. 204). This can be achieved by ensuring that the research process is clearly documented, logical and traceable (Bloomberg & Volpe, 2019). In order to strengthen the dependability in our study, we have in detail described our choices of methods and the process of collecting and analyzing the data. We have also recorded the interviews and transcribed them afterwards. In this way, everything that was said during the interviews were taken under consideration in the data analysis. It is not possible to include all of our data in the thesis, but the data is available for review by our supervisor.

3.3.3 Confirmability

Confirmability concerns that the findings should be the result of the research rather than an outcome of the subjectivity and biases of the researcher (Bloomberg & Volpe, 2019; Johannessen et al, 2011). In order to achieve confirmability of our study we have explained decisions made throughout the research process and choices of methods. In this way the reader can follow and evaluate these. We have also tried to be self-critical of how our study is conducted, and we have explained how the findings can be affected by biases and prejudices of the researchers.

3.3.4 Transferability

According to Bloomberg & Volpe (2019) the goal of qualitative research is to “develop descriptive context-relevant findings that can be applicable to broader context while still maintaining their content-specific richness” (p. 205). Transferability refers to if the study establishes descriptions, interpretations and explanations that are useful or applicable to similar phenomenon’s (Johannesen et al., 2011). We consider that the findings in our research can be useful in other contexts, specifically for other companies being subject to high and varying uncertainty in their operating environment.

4. Budgeting & Forecasting in OffCo

The purpose of this chapter is to describe the empirical setting of the study. The case company OffCo is presented with a description of its structure and the environment it operates in. Further the processes of budgeting and forecasting in the company are described. Finally, the performance evaluation and reporting structure in OffCo is described. This is one of the main purposes of both the rolling forecast and the budget. The information of the empirical setting is retrieved through interviews, internal documents, observation of the forecast process and meetings with employees involved in the processes of budgeting and forecasting.

4.1 About OffCo

OffCo is a company that delivers subsea solutions and marine services to the offshore industry and operates in all major offshore regions in the world. It owns and operates a fleet of vessels and ROVs (remotely operated vehicles) and have a team of subsea professionals. Since the company operates globally, its assets can be moved around to where the work is. The company operates within two segments: Long-term Chartering, where vessels are operating on long-term contracts, and Subsea IMR Projects, which is based on short-term projects.

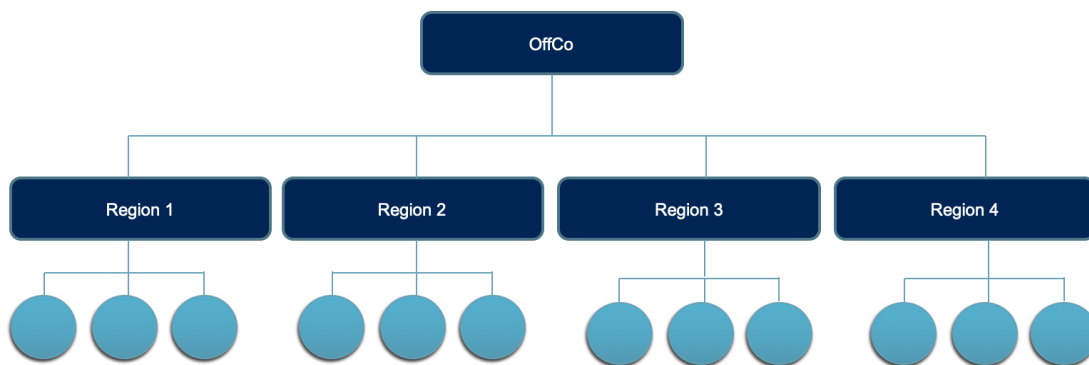


Figure 4: Structure in OffCo

OffCo consists of several regions that operate in different areas globally. The regions are divided into different entities as shown in figure 4. The number of entities under each region varies, hence the figure shows a simplified version. Further, the entities consist of projects,

Business Support and S G & A (Selling, General & Administrative expenses) which is illustrated in figure 5. Business Support consists of vessels, equipment and personnel which are used by the regions' projects. The departments within Business Support should normally go break-even, with recovery revenues equal to cost. This is achieved through standard costing of personnel and equipment (vessels and ROVs). All the departments' costs are allocated to the different projects through the standard cost rates. The projects are profit centers where all the external revenues from customers are generated. S G & A consists of different departments. These are finance, administration, executive management, and business acquisition among others. The departments are all cost centers that are used by the regions.

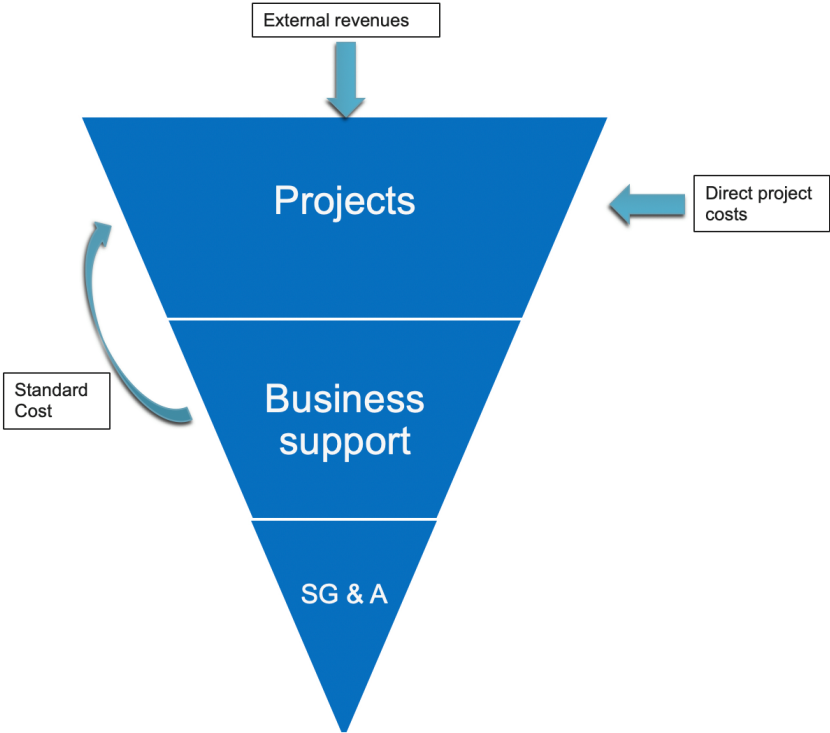


Figure 5: Entity build-up (Source: Internal document, OffCo)

After the oil price dropped in 2014, the market situation for the company became more challenging and uncertainty increased. OffCo's customers, which are most of the major gas and oil operators globally, experienced a huge price drop in their main source of income. To survive this, they had to demand lower prices from their suppliers including more transparency in costs and pricing of different components. In addition, the long-term

contracts decreased and were replaced with shorter spot contracts. This has created uncertainty in the environment OffCo are operating in and has affected its financial position.

“The projects we work on are very short term and the awards are very close to when the work is actually happening, so it is very difficult to actually forecast on them”

(Respondent 5)

As expressed by respondent 5, the forecasting has become challenging for the company. OffCo uses budgeting and rolling forecasts as management tools, where the assumptions behind are quickly outdated due to the increased uncertainty.

4.2 Budgeting in OffCo

The process of budgeting in OffCo starts in September and ends in mid- December when the final budget is submitted to the board. The budget will be prepared together with the 18-month rolling forecast starting in the fourth quarter. This forecast consists of the last three months of the remaining year and the budget for the next year. Although they are included, there are little focus on the last three months of the 18-month rolling forecast. A budget guideline is sent out to kick off the merged budget and forecast process. The budget part of the forecast should meet the requirements of the budget guideline.

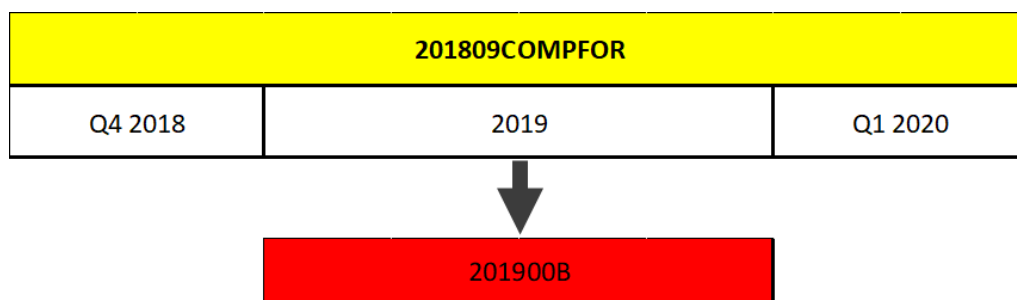


Figure 6: Forecast and budget interaction (Source: Internal document, OffCo)

Figure 6 illustrates how the budgeting process is merged with the forecast process in the fourth quarter in 2018. This 18-month rolling forecast consists of Q4 2018, 2019 and Q1 2020. The 2019- part of the forecast will be the official budget for the regions. When the regional budgets are completed, group controllers copy the 2019-part of the forecast over to the official budget version for OffCo. In this way, the budget is consolidated on group level.

Overview of the budgeting process

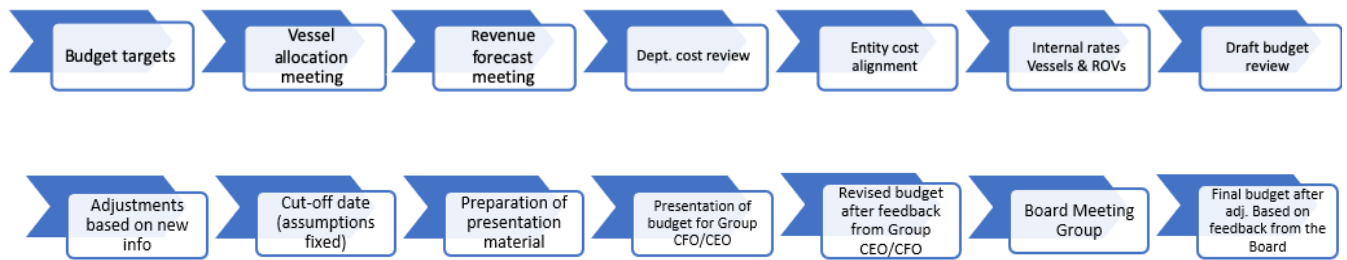


Figure 7: Budget process (Source: Internal document, OffCo)

The first part of figure 7 illustrates the process of preparing a draft budget in OffCo's regions. This process lasts for approximately one month. The second part of figure 7 illustrates the steps in the final budget preparation where adjustments is made on the draft budget. This period lasts for approximately two months. The regions therefore use three months on preparing and finalizing the budget. The following sections describes the budget process illustrated in the sequential step-by-step illustration above.

Targets and vessel allocation

The budget process has a bottom-up approach combined with top-down financial target setting. The process starts with the group CEO and the CFO setting indicative budget targets for the year. These targets include revenue and EBITDA on group level, and revenue on regional level. Other targets set are vessel utilization and targets for utilization of employees and contractors, which is called "chargeability". Vessels are then allocated to the regions through a vessel allocation meeting between regional EVPs (executive vice presidents), and the group CEO and the CFO. This is a key assumption for preparing the budget, but some vessel allocations may change after the vessel allocation meeting. Some vessels have been allocated to a specific region for several years, while other vessel's allocation is changed more frequently. Therefore, there is to an extent uncertainty connected to how the vessels will be allocated. During the meetings strategic assumptions are discussed to evaluate how the vessels should be allocated.

Vessel utilization and expected revenue

When the regions know which vessels they are allocated, they start off the budget preparation by reviewing opportunities for utilization of these vessels. This is done by

arranging a meeting between the regional EVP, the regional business acquisition manager, the regional business controller and the regional finance manager. Vessels are utilized in different projects with various time scopes that are won through tenders. Regions should strive to achieve the vessel utilization target set by the group CEO and the CFO. When reviewing opportunities, these are divided into different categories depending on the certainty of winning and realizing the project. The least certain category is “Blue Sky” projects, which is activity assumed to come based on experience and a gut feeling, but it is not related to any contract, tender or prospect. The review results in regions getting an overview of what is expected on the revenue side for the year.

Cost review and regional draft budgets

Further, departments’ resource requirements regarding personnel and equipment are reviewed to get the different departments costs. Costs are reviewed both on regional and entity level, and department level costs are reviewed and approved by the EVP. In this process, standard cost rates for personnel and equipment (vessels and ROVs) is calculated, and these rates are fixed for the year. Once these rates are set, the budget draft is prepared and reviewed. After the draft is finished, it is uploaded into Agresso, which is the company’s ERP system.

Regional budget adjustments

After the regional budget draft is reviewed there is a period of 2-3 weeks where adjustments can be made based on new information and assumptions. This can be a work intensive period for the regions where the vessels’ allocation may change, which could have a large impact on the region’s budgets. After this period there is a cut-off date where the assumptions for the budget is fixed.

Presentation of the budget

After the regions have completed a draft budget and the cut-off date has past, the regions will present their budgets to the group CFO and the CEO. Feedback is given and the regions will get a couple of days to perform the adjustments that is required. When these adjustments are made, the budget is consolidated on group level by group controllers. The official budget for OffCo is then completed and will be presented to the board. The budget is presented at the Q3 board meeting in November, where the consolidated level and the regional budgets will be reviewed. Main figures are approved, and feedback is communicated to the regions.

The board can ask for smaller or larger adjustments in the budget. Further, corporate coordinates with regions and asset owning companies to correct and complete the final budget considering the comments given by the board. The final budget is submitted to the board in mid- December. After the final budget is approved, a budget book for the year is prepared by corporate controllers.

“The budget particularly is a very heavy and resource demanding process which goes on for three months for the regions (...). The process starts in late August or early September, and we’re having the last presentation for the board mid-late December. Even now in February, we’ve just finished preparing this budget book for the year. So, it’s a heavy process for the whole organization.”

(Respondent 2)

4.3 Forecasting in OffCo

The forecast for the different regions in OffCo is updated quarterly and go eighteen months ahead. For the projects, a forecast is made every month, and every third month it is copied into the regional forecast. The quarterly forecast process is a similar, but simpler, process compared to the budget process. Standard cost rates on personnel and equipment used in the rolling forecasts are determined annually in connection with the budget process. Unless there are major changes in assumptions (such as large changes in number of employees not anticipated in the budget) the department costs are assumed to be the same as in the budget. There is therefore no need to arrange meetings with all the department managers. In case of major changes in assumptions, a quick chat is taken with the department manager and necessary changes made. This decreases the time used and people involved in the forecasting process.

Before the forecast process starts, a guideline is sent to all the regions explaining requirements, deadlines and other information about the process. The three first months of the budget is used as the forecast for the first quarter. The three next quarters the forecast process starts with each region arranging revenue meetings which are similar to those in the budget process. In these meetings the regional business acquisition manager and the regional EVP meet up with the regional finance manager and the regional business controller and

give assumptions regarding which vessels that are available for the region, vessel schedules, vessel utilization and expected future projects. Based on this, an activity plan for the personnel in each department is made and shows if there is need for changes in the personnel base. The forecasts for current and future projects, including model forecasts for prospective projects, are copied into the regional forecast by uploading them into the ERP system Agresso. In the ERP system, forecast reports are made and delivered to corporate. The regional forecasts are further consolidated on group level by the group controllers and presented for the group management. At last the CFO presents the forecast to the board. The whole forecasting is summarized in figure 8.



Figure 8: Forecast process (Source: Internal document, OffCo)

4.4 Performance Management & Reporting Structure

OffCo evaluates their performance through variance analysis. In monthly reports deviations between the budget, the rolling forecasts and actual results are shown and explained. The explanations of the deviations describe whether it is a price or a volume deviation. The reporting system, shown in figure 9, is a bottom-up-approach. The project management reports (PMR) and the department management reports (DMR) are used as input in the regional reports. These are further used as input in the board pack on group level. When the board receive the board pack, it is used as input in the external reporting. The board pack and the external reporting does not show the rolling forecast numbers and are only commenting on deviations between the budget and actual results.

The project manager, the department manager, the regional EVP and the business acquisition manager are accountable for the different deviations in the PMR, the DMR and the regional reports and have to provide explanations for them. OffCo have not used bonuses in their performance management since 2015/2016 because of the challenging market situation they are facing.

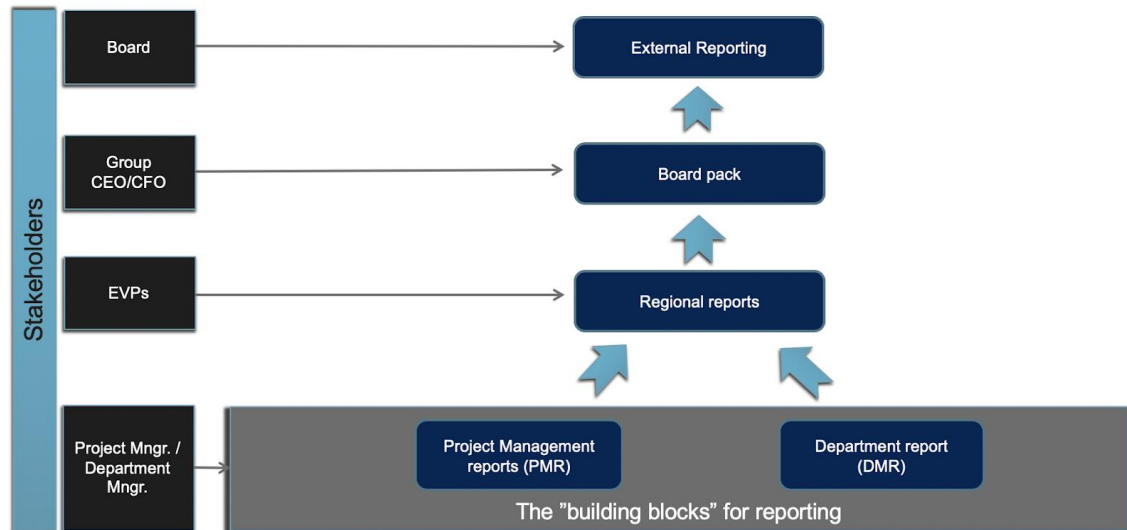


Figure 9: Reporting structure (Source: Internal document, OffCo)

4.5 Summary of Empirics

OffCo is a global company that delivers subsea solutions and marine services to the offshore industry. The company operates in an environment with high uncertainty which makes the use of budget and rolling forecasts challenging.

The 18-month rolling forecast in the company is updated each quarter, except from the projects' forecasts which are updated each month. The processes of budgeting and forecasting interacts, as the budget is based on the last quarter forecast, and the first quarter forecast is the same as the first quarter of the budget. The budget process is more time and resource demanding than the forecasting process. This is due to a yearly estimation of standard cost rates and cost base in the departments, which involves many meetings. The cut-off date for doing changes in the assumptions behind the budget is set late in the process. This causes a lot of work during the period, because new assumptions often require comprehensive changes in the budget.

In OffCo, performance evaluation is an important purpose for the use of budget and rolling forecasts. Managers are evaluated monthly based on variance analysis between actual, forecasted and budgeted numbers. The variance analysis is made on each level in the company and reported up to the next level. When reporting to the board and external stakeholders, only budgeted and actual numbers are compared.

5. Analysis

This chapter's purpose is to address the problem statement of this study, which is done through discussion and analysis of the research questions outlined. Theory and empirical data form the foundation of the analysis. The problem statement and the research questions are:

Why do companies use rolling forecasts, and how is forecasting used as a management tool?

- 1. What are the drivers behind the use of rolling forecasts?*
- 2. How is the rolling forecast used as a tool?*
- 3. What are the differences between budgeting and forecasting?*

First, the chapter will analyze which drivers that are important for why OffCo is using rolling forecasts. Bergstrand's (2009) framework outlined in chapter two is applied to analyze how uncertainty and flexibility affect which management tools it is optimal to use. Then an analysis and discussion on how the rolling forecast is used as a management tool follows. The rolling forecast in OffCo should be analyzed with respect to the budget since the processes are interdependent. Hence, the last part of this chapter discusses the differences between the rolling forecast and the budget.

5.1 Drivers Behind Using Rolling Forecast

As presented in the literature, there are several drivers that affect the use of rolling forecasts and budgets. By analyzing and discussing the data collected the important drivers for the use of rolling forecasts in OffCo will be detected.

5.1.1 Environmental uncertainty & flexibility

Environmental uncertainty

OffCo operates in a challenging and uncertain market as they are dependent on the oil price. There are two factors affecting the uncertainty when considering the development in oil prices; fluctuations and shocks. The oil price is driven by changes in supply and demand which causes fluctuations in the oil price. But certain events can cause changes in supply and

demand that gives an oil price shock. This causes a considerable drop or increase in the oil price.

The environmental uncertainty has increased in recent years. This is rooted in the oil price drop in 2014. The fluctuations in the oil price were on a higher level before the oil price drop. These fluctuations caused an uncertainty connected to the revenue OffCo would achieve each year. The oil price shock in 2014, however, caused uncertainty linked to OffCo's financial position and survival. The revenue for OffCo's customers were reduced as they are dependent on the oil price, and only essential projects were held ongoing. This resulted in decreased demand for OffCo's products and services, and their revenue dropped. After 2014, the oil price has fluctuated on a lower level than before.

“This spin back to 2014-2015 when the oil price plummeted. So, that created a lot of uncertainty in terms of customers (...). What we saw is that they became more conservative in terms of spending money. So, any terms of projects that they had ongoing that was not essential was stopped or delayed.”

(Respondent 4)

When considering the uncertainty, it is relevant to discuss whether it is the actual or perceived uncertainty that has increased. The literature describes how it is the perception of uncertainty that is important for the design of management control systems (Sandelgard, 2013). Both the actual and perceived uncertainty can be argued to have increased in recent years. Actual uncertainty has increased due to the weakened financial position for OffCo after the oil price drop. However, the perceived uncertainty might be higher than the actual uncertainty. The weakened financial position might have resulted in OffCo focusing more on the uncertainty caused by fluctuating oil prices than before 2014. This is because the consequences are more severe, and it is crucial to achieve the highest possible revenue. The uncertainty might therefore be perceived to have increased more than it actually has.

The increased (perceived) uncertainty since 2014 have not affected the design of the management control system. The 18-months rolling forecast was implemented in 2010. But the uncertainty has made the rolling forecast more important. OffCo is more dependent on reliable numbers which is obtained through forecasting since the budget is quickly outdated.

“So, we (...) need (...) more reliable numbers. And the reliable numbers we get in the forecast process. So, I think the courses we have been through now is just emphasizing that having a rolling forecast is important.”

(Respondent 7)

Sandelgaard (2013) describes two dimensions of uncertainty; unpredictability and increased (global) competition. When considering these dimensions, the oil price drop has made the future more unpredictable. Increased uncertainty has made budgeting challenging as the budget becomes outdated faster. A more uncertain market has increased the customers' demand for spot jobs and has led to fewer long-term contracts. The result is less predictability and stability for OffCo in contrary when there were more long-term contracts.

“The budget we’re still clinging on to (...). But (...) it is very quickly out of date, and even during the last two-three months you’ll be working on the budget it will be out of date between the time you’ve started and ended the process. This is exasperated when there is a lot of uncertainty in the market. Basically, because you have fewer long-term contracts and more spot contracts. So, more vessel days to sell.”

(Respondent 2)

Before, the customers were more predictable and there was a larger visibility in which contracts were coming out. Now, this has changed and there is more uncertainty around when contracts will come. This makes budgeting and forecasting challenging, and there is a high level of uncertainty in the end period for both the budget and the forecast.

“Our clients, say Equinor, they are not that predictable anymore, because a few years ago you had 365 contracts coming out. You knew when they were coming, and you definitely knew if you had it (...). But now, it’s more like you get a call on Friday to deliver on Monday and you go off on Wednesday. That’s difficult. So, a lot can happen between every forecast (...).”

(Respondent 6)

Which contracts OffCo will be awarded to execute during the year is an important assumption for the budget. This gives an overview on expected revenues. In the uncertain environment OffCo have experienced after 2014, these underlying assumptions are more

likely to become outdated and irrelevant. Therefore, the forecast is a valuable tool as it gives updated information to base decisions on, and supplements budgets as a planning tool. This is in line with how Bergstrand (2009) recommends companies experiencing low predictability to handle uncertainty in their planning process. Several respondents describe why the rolling forecast is perceived as an important tool in OffCo:

“Well, the advantage [of rolling forecasts] is that you get updated information all the time. (...) and as I said, the budget is dead after 3 months (...). So, it’s not a useful tool anymore as you go far out in time.”

(Respondent 1)

“The forecast gives you that structure to look at what needs to be done and make decisions to achieve your target.”

(Respondent 2)

The other dimension of uncertainty, increased (global) competition, could also be argued to be present for OffCo. When the demand dropped in 2014, the competition increased in the offshore supply industry. This resulted in OffCo and their competitors flushing their prices to win jobs. But even though prices decreased, the amount of work continued to drop. Aligned with the mechanisms from supply and demand theory, this resulted in the prices continuing to drop. The result is increased global competition in the offshore supply industry.

“So, our competitors and ourselves where flushing the prices. But the customers where still not spending as much as they used to. The amount of work just continued to drop, and the prices continued to drop. And, we really have not sort of recovered from that yet.”

(Respondent 4)

The competitors are more difficult to predict in today’s market. This unpredictability contributes to the budget becoming outdated, which can increase the need for the rolling forecast. The rolling forecast helps OffCo obtain updated information to disclose the competitors’ reactions to the market. Respondent 1 explains how competitors’ reactions can further depress the market situation:

“It’s more difficult to predict the competitors (...) reactions to the market, right. So, you could typically see that you get into a downturn, and then (...) maybe the competitors (...) need the jobs so much that they would underbid jobs (...). They would actually go into jobs whether they lose money. And that further depresses the market.”

(Respondent 1)

Flexibility

Flexibility is important to handle changing and unpredictable environments. By using rolling forecasts OffCo get updated information on where they will end up with respect to the budget. The budget is used as a target for OffCo. However, as the assumptions for the budget are quickly outdated in today’s market, it is not always a relevant target to steer towards. OffCo then uses the rolling forecast to act and react to changes in their environment, which often involves hard decisions regarding downsizing. To be able to use the rolling forecast to drive action and decision-making, flexibility is an important prerequisite. OffCo can be argued to have an acceptable level of flexibility, but there are some challenges related to it.

“You get updated information, and when you get updated information you also need to (...) follow that up with actions. And that I can tell you is not always fun.”

(Respondent 7)

Labor is a large cost base for OffCo, and over the past years OffCo have tried to get a more flexible labor force. This involved increasing the number of contractors and reducing the permanent workforce aligned with the development in the market. This is a benefit as the workload for OffCo varies and it is hard to predict when new contracts will be won. OffCo can then hire workers for specific jobs instead of hiring them at a permanent basis. But reducing permanent workforce is challenging, especially in regions where labor unions are strong.

“So, what has happened is that over the years we have sort of slowly and organically reduced our permanent workforce in line with the market and then we have brought

back, sort of contractors and casual employees (...), to meet the demands of peaks and spikes in the workload.”

(Respondent 4)

“You need to have a flexible cost base. It is important that you can ramp up and ramp down people. But it has its problems, certainly in Norway where the unions are very strong. That could be a bit problematic in trying to get a flexible cost base.”

(Respondent 2)

Another factor that makes reducing permanent employees difficult is the need for a minimum capacity to win and execute jobs. If it is difficult to hire contractors, the regions should still be able to secure activity in the regions by winning and executing jobs with their permanent workforce. There is therefore a fine balance between laying off employees to become more flexible and securing the optimal workforce. This challenge is communicated to corporate by the regions:

“But it is difficult for the regions because, and this is the problem they communicate to us: you need a minimum capacity to win and execute jobs. If you start cutting below that you’re not going to be winning and executing the jobs. This is going to become sort of a vicious cycle where you’re never winning any jobs and cutting more people.”

(Respondent 2)

Further, the global footprint is a competitive advantage for OffCo that increases the company’s flexibility. It is central to be able to move vessels between regions depending on where they are most needed, and also to move them between the company’s two segments:

“So, we can kind of move them [vessels] around regions, which is one of the big pluses we have. (...). Having this global footprint is a big competitive advantage for us. Being able to move vessels between segments as well, between the long-term chartering segment and the subsea and project segment are a big advantage for us. And I guess in that way you can say it’s flexible.”

(Respondent 2)

As presented in the literature and shown in figure 10, a framework by Bergstrand (2009) suggests how uncertainty and flexibility affect which management tools it is optimal to use. Through the interviews it has become clear that OffCo operates in an uncertain and challenging environment. This has especially been the situation since the oil price dropped in 2014 when their financial position became weaker. In connection to Bergstrand's framework, OffCo have a high level of perceived uncertainty in their market.

When considering the flexibility/freedom of action, it is more unclear where OffCo should be placed in Bergstrand's framework. The company is able to reallocate ships among the regions and they have decreased their permanent workforce, which pull towards the direction of high flexibility. However, there are challenges related to how flexible OffCo are able to become. This is both because reducing the permanent workforce is challenging due to strong unions, and because it can be challenging to find work for vessels and achieve the vessel utilization target. According to Bergstrand's framework, the rolling forecast should be used when both flexibility and uncertainty is high. OffCo have an acceptable level of flexibility, and the use of rolling forecasts somewhat aligns with the theory on when the rolling forecast is a valuable management tool. Full consistency with the theory is difficult due to the challenges related to OffCo's flexibility.

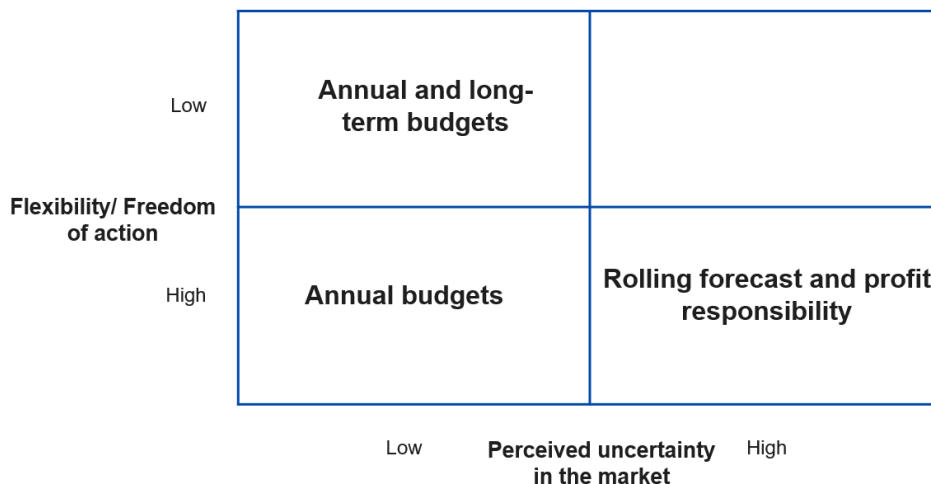


Figure 10: Uncertainty and flexibility (Bergstrand, 2009, s. 180)

5.1.2 Financial position

After the oil price shock in 2014 the demand after OffCo's products and services has declined. This has affected OffCo's financial position. Since the oil price in recent years has fluctuated on a lower level than before 2014, the uncertainty caused by fluctuations has more severe consequences. This is due to the weakened financial position causing an uncertainty around OffCo's survival. In the following years, OffCo have tightened the control by top managers by doing a more detailed variance analysis in their performance evaluation. In the monthly reports, deviations between the rolling forecast, the budget and actual numbers have to be explained in more detail.

"(...) a few years ago, they would look at the major numbers and maybe be satisfied if you could explain like the overall change. Whether now you have to be very (...) detailed in your comments. And I think it's good of course, but it takes a lot of extra effort when you have to deliver reports like that."

(Respondent 3)

The respondents also explain how the company has become more cost conscious, and that the variance analysis have become more detailed especially in regard to costs:

"(...) I think there has been a lot more focus (...) on cost reduction. So, in that regard, we've been very focused on measuring against cost in the budget and forecast (...), maybe three-four years ago we'd produce a budget where there was not such a strong focus on the cost side of it. When our revenues were streaming in, we could probably take our eyes off a bit more."

(Respondent 2)

"(...) it's a much higher focus on the costs than it was previously. So, in 2014 for example, before the actual downturn started, the market was really good, and we didn't necessarily go that into the details on everything. But that has changed, both, I think, within the region here from our management and also from the management on top. They are much more cost conscious (...) and kind of focusing on the resources that we need and smaller items."

(Respondent 3)

In line with the theory by Bourmistrov & Kaarbøe (2017), tightened control by top managers seems to be a response to OffCo's financial position and the stakeholders' demand for cost-cuts. A tighter control is also seen in OffCo's budget process which has become more centralized the last year. The top management has introduced more and more detailed budget targets which can be a way of getting more control in a challenging situation. In contrary with results from the study by Becker et al. (2016), OffCo have not decreased the use of budgets or rolling forecast for performance evaluation after facing challenging market conditions. This might lead to lower motivation because of unrealistic and too ambitious targets. However, OffCo are no longer using bonuses for motivation and there are no serious consequences for the managers of reaching the budget/rolling forecast or not. Furthermore, factors that cannot be controlled by the managers are taken under consideration when evaluating them.

“But then if the market is totally different (...) you can't say anything, whether you performed well or not.”

(Respondent 1)

“... since everyone in the company knows that the result in the department is very dependent (...) of what we get in (...) you are not shut down if you get into red numbers, because that is driven by something else.”

(Respondent 6)

5.1.3 Digitalization

OffCo uses a CRM (customer relationship manager) system and ERP (enterprise resource planning) system in their forecasting process. These are systems that the company use to simplify the process by gathering and systemizing information. As explained in the article by Gandomi & Haider (2014), the rise of new information technology has enabled even bigger impact on companies' forecasting. The use of data management and analytics on big data can provide companies with input in their forecast. However, this technology is not used by OffCo, which executes most of its forecast process manually.

The ERP system in OffCo is used to automate the creation of forecast reports and presentations. Granlund & Malmi (2002) find in their study that ERP systems can be used

globally and by different departments. In OffCo, however, the ERP system is only used by business controllers in the forecast process. This is due to the limitation that the input numbers cannot be put directly into the system. First, they have to be written in an excel sheet by the manager who further sends it to the business controller. The business controller transfers the information to an excel sheet with macro codes which further can be uploaded to the ERP system.

“(...) the actual work you have to do to upload all the information, that’s a bit time consuming. Cause you can’t just input the data directly into the Agresso system. You have to go through an excel sheet we have built up with a lot of macro programming. So, you have your worksheets, and then you have the macro programming sheets, and then you have Agresso. (...) it’s kind of a 3-step process to get the information into the right place. When you have it, then it works very well, but it just takes a little time to upload everything.”

(Respondent 3)

As stated by respondent 3, the input process for making the forecast reports is time consuming. However, it is still more efficient than using excel for the whole forecast process, which was the case before the ERP system was implemented. Moreover, as discussed by Davenport (1998), the use of ERP systems involves a standardization of processes. Respondent 2 explains how the ERP system has resulted in one standardized forecast presentation, instead of the different departments, projects and regions making their own presentations which would come in several different formats.

“Before we didn’t have an official standardized report. Previously, people would have to build their own queries and dump it into excel, pin some tables. When we asked for presentations, it would come in all sorts of formats. And now we build a report given in a standard format in Agresso.”

(Respondent 2)

This have improved the quality of the forecast presentations and made the consolidation of the forecast easier. However, changing numbers in the forecasts, which has to be done several times due to changes in the assumptions, is also time consuming.

“It can take a long time to update the report. If you make one change to your forecast, for example improving the revenues on a project, and update it, you have to wait 20 minutes to check the changes. So, it is pretty heavy going.”

(Respondent 2)

It can be asked why OffCo has implemented an ERP system which shows to make some improvements of the quality and efficiency of the forecast process, but still keeps the process time consuming and cumbersome. The article of Davenport (1998) stresses that implementing an ERP system can involve centralization of control of information. This is seen in OffCo where the business controllers on regional level has gotten more control of the forecast numbers. As discussed earlier, getting more centralized control can be a way of handling a challenging financial position (Khandwalla, 1978). When implementing an ERP system, the company should also change its processes to fit the system (Hong & Kim, 2002). It is uncertain whether OffCo has done this, and therefore whether the ERP system is used in the best way.

OffCo also use a CRM system to support their forecast process. This is used in the business acquisition department where OffCo’s future projects and revenues are predicted and estimated. Respondent 5 explains how the CRM system gather information about customers which can be analyzed and help understand the market:

“We use a CRM tool, which is used for looking at all our prospects, that is all our client opportunities and proposals. (...) We use the CRM tool as well to help us understand how the market is and how we potentially can forecast going forward.”

(Respondent 5)

However, the system has only been in use for a few years, and the employees are still learning how to use it correctly. This indicates that the department is not dependent on the CRM system to carry out the forecast process. Respondent 9 explains how important the knowledge and experience of the employees working in business acquisition is, and that systems like CRM cannot fully replace this:

“(...) of course, you can automate a lot I would say. But it is up to the people sitting in the market [the business acquisition department] and they are trying to figure out what the need is in the oil companies. And that is one-to-one marketing. You have to sit down with the guy in the oil company and try to figure out what their need is. And then you have to do some estimate on what our success rate is and how probable it is that we will win this job. (...) so, I think having people that understand the risk, having experience (...) having the knowledge that the guys sitting in the markets have, and then get that turned into reliable numbers, and then quality numbers, that is the hard part.”

(Respondent 9)

As this indicates, the predictions of future revenues in OffCo’s rolling forecasts depend on knowledge about the customers’ needs. In order to gain this knowledge, it seems to be important to have a relationship to the customer and get information through an open dialogue. These findings show that OffCo are not dependent on digitalization to carry out their rolling forecast process, but they have an ERP and CRM system which assist in the process and make it more efficient.

5.2 The Use of Rolling Forecasts

In this chapter, the use of rolling forecasts will be analyzed and discussed. This thesis focus on the use both on group level and in one of the company’s regions. The data collected through interviews shows that the rolling forecast is important to obtain updated information for decision-making and planning in OffCo. The rolling forecast is also used for performance evaluation. Further, it is used for financial planning and to keep investors updated.

5.2.1 Decision-making tool

The rolling forecast in OffCo is used for resource planning and allocation in the regions. Forecasting gives updated information and shows where OffCo are currently at in today’s market. This information drives decision-making and is directly linked to planning of resources. Using the rolling forecast for optimizing resource allocation aligns with the literature on how the rolling forecast is a navigational tool to adjust to environmental changes more quickly (Zeller & Metzger, 2013; Leon et al., 2012). In the forecast process it

is determined which resources are needed based on current and future projects. This includes decisions about changing the personnel base, moving vessels to other regions or putting them in dry dock to reduce cost. Every month OffCo review their performance based on deviations between the forecast and actual results. If the actual results repeatedly are better or worse than the forecast, it can be a trend of what is coming, and actions will be taken according to that. This use of forecasting is emphasized on different levels in the company, among others by the group CFO and the regional business controller:

“So, you can say that in our business that is project driven, the whole business model is that when you win a lot of jobs you hire people and use contractors to execute the jobs and when you have no jobs you need to lay them off. And, of course, that is something the forecast help you decide on.”

(Respondent 9)

“I would say that one of the main purposes is to see how we’re gonna end up at the end of the year. We need to know if we’re gonna loose (...) 50 million or 100 million or gonna earn money a year. (...) and that’s also directly linked to planning our resources, So, if you see that one year is gonna end up at say minus 100 million, just take a number, then you need to take some efforts to reduce your cost base. So, that is generally what we use it for. To see how much we can utilize our vessels and how much personnel we need at any given time to perform the projects that we think we’re gonna have. And then you adjust to that.”

(Respondent 3)

However, respondent 6 explains that it can be challenging using the forecast as a decision-making tool. In the operations departments, bad decisions can be made based on the forecast. The perceived understanding of the forecast is that it is so accurate that actions should be taken based on it. But it can sometimes turn out not to be that accurate after all. To take actions on larger matters, such as cutting cost by reducing personnel base and moving vessels, can be challenging. Assumptions that decisions are based on might change during the period it takes to realize the cost reduction. For lay-offs for example, it takes 3 months for the cost reduction to be realized because of the notice period.

“The challenge (...) for the department, is that we can (...) take some really bad decisions based on it [the forecast]. Because, if you get a big job in Q3, but are sitting in Q1 and the forecast is looking really bad, and so you have to do something about it. You don’t have an overview of what’s coming in Q3. Take it to the extreme; if you lay off people based on the forecast you have a problem in Q3. (...) So, that is a challenge, because (...) the understanding of the forecast is that it is so accurate that we need to take action based on it. (...) and that makes it a challenge. Because it might not be that accurate after all. And of course, when you have that delay (...) before the cost cut comes in, that could be a problem.”

(Respondent 6)

The challenge that respondent 6 emphasize seem to be connected to the level of uncertainty of the rolling forecast. Even though it provides updated information to base decisions on it is a problem that the forecast can become outdated quickly. In today’s uncertain market, even the forecast for the next month can be hard to produce accurately:

“(...) it could be a disadvantage that even the forecast is kind of out of date very quickly. At least if the market is changing as fast as it is now.”

(Respondent 3)

“(...) there is still a level of uncertainty. (...) I am about to prepare the forecast for April and onwards. (...) we are only a few weeks away from April, so you would think that we would have a good understanding of what April will look like. But then April turns out to be nothing like you have expected.”

(Respondent 5)

Changes in resource allocation based on information provided in the forecast are mainly concentrated around the months following the completion of the newest forecast. Like mentioned, this includes decisions about changing personnel base, moving vessels or putting vessels in dry dock. But such changes will have implications in the long run. For example, like respondent 6 explain, if a large contract is won in Q3 that the company is unaware of in the Q1 forecast, and people are laid off based on a bad Q1 forecast. However, the forecast provides the most updated information the company can base decisions on. In order to adjust to environmental changes, the rolling forecast is an important tool that guides the day-today

decision-making. This aligns with the literature on how to secure shareholder value (Zeller & Metzger, 2013). Respondents describe how the forecast is used for resource allocation and planning:

“So, the decision-making is kind of based on what we think is going to happen in the near future. So, if we do a forecast now in March for example, we would use that to plan which resources we need for the summer period, and to see whether or not the last quarter of the year is going to be busy or not. If we have to lay off people or do temporary lay-offs or whatever.”

(Respondent 3)

“Well, that is more on a day-to-day decision-making process. (...) How many people do we have today? How many people do we need tomorrow? (...) That is more sort of the forecast decisions.”

(Respondent 4)

5.2.2 Performance Management

In OffCo the rolling forecast is among others used for performance evaluation, where the managers who are accountable for achieved results have to explain deviations between actual and forecasted numbers.

“People are measured on a monthly basis against both the budget and the latest forecast. So, if you, let us say you are in the fourth quarter, you have the forecast you did in August, and people are measured against the budget for the year, for those months, and also the latest forecast”

(Respondent 9)

This contradicts from how the purpose of a rolling forecast is defined by researchers, where performance evaluation is not mentioned (Bergstrand, 2009; Lorain, 2010). Nevertheless, it seems to be used in practice by some companies (Bjørnenak, 2014). One common feature for the companies using rolling forecasts for performance evaluation is the high level of detail in their forecasts, which makes it more similar to a budget.

As discussed by Lorain et al. (2015), performance evaluation is often linked to the company's incentive system in order to motivate managers to work towards the company's targets. Respondent 7 explains that OffCo have not used bonuses the last years because of their financial position and unachievable targets:

“We did that before when the market was better. We haven't done that for the last (...) couple of 3 years (...) It hasn't been any room for that. And I guess it's also fair to say that most of the regional EVP's they have not been able to deliver on what they have said in the budget. So of course, a combination”

(Respondent 7)

The article by Lorain et al. (2015) further discusses how there is a correlation between motivation and feasibility of targets, and that unachievable targets can result in discouragement. It also mentions that uncertainty in the environment of a company and a difficult financial position often can result in unachievable targets. This is in line with OffCo's decision about not using bonuses as they are facing uncertainty and financial difficulties. Today, the consequences of reaching the rolling forecast or not seems to not be very serious according to the respondents:

“They are held accountable. But there are no ramifications if they are over or under that I am aware of.”

(Respondent 5)

“I guess the accountability should come from the top, and I think the EVPs get driven quite hard (...). How hard the EVPs then come down on their department managers, I'm not so sure about (...). But from my point, it doesn't seem like there is a huge amount of accountability and action directly on department managers (...). There might be a firm word, but that's kind of it.”

(Respondent 2)

“In theory, it should be some action plan if you are not achieving your budget. Then, of course if you are exceeding your budget everybody is happy.”

(Respondent 9)

5.2.3 Other ways of using the rolling forecast

The rolling forecast is also used for input in the cash flow forecast for the company. It is therefore used for cash management on group level. Another use of the forecast is for the group to provide some guidance when OffCo's parent company are realizing numbers on the national stock exchange.

Cash Management

OffCo is carrying a large amount of debt due to its ownership of expensive assets. Cash management is therefore important. It has become even more vital as the equity of the company have declined and the market situation is challenging. All regions in OffCo are dependent on loans and must be able to plan for how much money they need at any given point. The rolling forecast is used to provide updated information on this for the regions.

“(...) because of the cash situation that we have now (...), equity in the company has gone drastically down. And you are (...) dependent on loans in each of the entities really. (...), you have to be able to plan, for how much money you need at any given point. (...) and then we have to go to treasury in [OffCo's parent company] and ask for a loan for example or discuss the situation at least. For example, at the end of the year, we needed to prepare a report saying if we were cash positive or cash negative, and how long it would take us before we would need a refill of money (...). That's quite a high focus on that, now at least, because we are still in a bad market situation.”

(Respondent 3)

The updated information provided by the rolling forecast is used in the financial cash flow forecast on group level. This is a five-year model, where the rolling forecast in each region provides input to it. Aligned with the article by Lorain's (2010), using information from the region's rolling forecasts help OffCo to gain better control of the cash flow, and to forecast cash flows more accurately. Having accurate cash flow forecasts allows the group management to consider how much money the company can lose in some areas since they are aware of how much cash is available:

“When you get into the position where the market is though, it is more about recovering any cost, as opposed to all cost. So, trying to reduce your losses. That is something that people like a CEO have discussions on. Like, saying; Okay, we might lose some money in some areas, but how much are we okay to lose considering how much cash we have available.”

(Respondent 5)

Updating investors

Challenging market conditions have made it more important for investors to get updated information about OffCo’s financial position. This is to ensure they are getting a return on their investment. OffCo’s parent company is listed on Oslo Stock Exchange. On a quarterly basis, when the parent company is releasing a new financial report on the stock exchange, OffCo’s management are often asked about how the company is doing in respect to the budget. The rolling forecast is used to obtain the requested information. OffCo does not use the forecast for external reporting, but they use the forecast to give the guidance on whether their current position supports the budget or not. As one respondent explains:

“(…) it is all about meeting targets for the end of the year for the group. So, the group is obviously driven by shareholders, stakeholders, stock market. So, it is all about driving towards that (...). Obviously, they do not like surprises, so we want to

make sure we give return to the stock market for the shareholders. So, that is what we use a rolling forecast for; to confirm and make sure we are aligned with that.”

(Respondent 5)

Renegotiation of loan terms

Due to the challenging market conditions since 2014, OffCo have several times been in the position where their liquidity have not fulfilled loan terms by the banks. This has led to the need of renegotiation of loan terms. In this process, the rolling forecast provides OffCo with valuable information to use in the negotiation.

“It is important for us to see where we are with respect to what we have said in the budget. It is important for example with respect to the banks to see; Okay, we have

said we are going to deliver 16.000, (...) the forecast we have now is guiding towards that.”

(Respondent 7)

“(...) they use this information [from the forecast] upstairs [corporate] for like loans on the vessels, renegotiation of the loan terms, things like that. So, they need updated information at any given time.”

(Respondent 3)

5.3 Difference Between Rolling Forecasts and Budgets

The following chapter discusses differences between rolling forecasts and the budget in OffCo. Both differences in the process of forecasting and budgeting and how the two management tools are used are discussed and analyzed. An important finding is that the budget is strongly used for reporting to the board and external stakeholders, while the rolling forecast is used for reporting further down in the company. We also find that there is an ambiguity whether the rolling forecast is predictions of future outcomes or more target oriented.

5.3.1 Difference in the process of forecasting and budgeting

The processes of budgeting and forecasting are connected, and the budget is produced through the forecasting process in the fourth quarter. Since this forecasting process produces the official budget for the upcoming year, the process stretches out for a longer period and lasts until mid-December. The official budget is used as a forecast for the first quarter, so that the first forecast of the year is not done until April- May. The assumptions set in the budget are considered to be relevant for the first 2-3 months of the year. After the first quarter, the assumptions for the budget are likely to be outdated. The budget is sufficient for planning the activity for the first quarter. But due to the project activity in the company it is difficult to meet the targets set in the budget for the rest of the year. Respondent 7 explains how the budget is similar to a forecast, and that the forecast is actually more important than the budget:

“I think it’s more important with a quarterly forecast than it is with the budget process. So, actually the budget is just a forecast that you do on the fourth quarter. (...) what you do in November when you do the reforecast, (...), it’s actually a picture of the next 12 months you know. (...) But of course, we are doing a little bit more out of it with respect to the budget, but it shouldn’t be a lot of changes from what you do on a quarterly forecast than what you do in a budget. (...). The reason for it is because we have so many changes of important (...) factors. (...) Then of course we want to have updated numbers to measure the different entities against.”

(Respondent 7)

The timeframe of the processes is different. Whereas the budget period lasts from September until December, the forecasting process normally last for one to one and a half month. Both processes are quite comprehensive, but the budget process is heavier and more resource demanding. One factor making forecasting less comprehensive and time-consuming than budgeting is that the cost base built through the budget process is used in the forecast. OffCo uses a standard cost system, and standard cost for personnel, vessels and equipment are calculated in the budget process and will be fixed for the following year.

“The process is in many way’s kind of similar to the budget process. The only thing is that, when we do the budgeting, ehm, we build the cost base from the ground up so to speak. Whereas in the forecast, (...) you assume, (...) at least to some degree, that the cost base set in the budget is the same as you’re gonna use in the forecast. So, you don’t have that process where you go through the meetings with all the department managers to go through each of the cost line and accounts. So, in that aspect it is much easier to do the forecast than the budget.”

(Respondent 3)

The level of details in OffCo’s rolling forecasts contradicts with the researcher’s definitions of rolling forecasts (Bjørnenak, 2014; Bergstrand, 2009). Instead of using a chosen set of important parameters in their forecast, OffCo uses the same level of details as in the budget. On the question on whether the level of details in the forecast and the budget are the same, respondents answered:

“They are much in such the same. So, you are working around sort of the same items as you do in the budget. That is pretty much the same. You are effectively updating the budget as you go along.”

(Respondent 5)

“Yes, it is (...). But (...) sometimes you use a lot of the information (...) that you get in the budget process, you could use that in the forecast as well. So, you don’t do another round. Not until the next year.”

(Respondent 1)

“It is the same as in the budget, but you can say that the time spent on assumptions is less.”

(Respondent 9)

5.3.2 Difference in the use of rolling forecasts and budgets

The rolling forecast has an ambiguous position in OffCo. The respondents describe it differently, and it is unclear whether it is used as a target or an estimate of likely future outcomes. Some respondents stress the difference in purpose between budgeting and forecasting:

“We’ve always looked at the budget as the target for the year and the forecast as what’s expected for the year. The forecast is less of a target, you’re not striving to achieve the forecast. It is more where you think you’re going to end up. So, the budget provides the target and we should be building in a stretch so people will strive to achieve the budget.”

(Respondent 2)

This aligns with literature by Morlidge & Player (2010), stating that the rolling forecast is not a target but an estimate of where the company is heading based on current assumptions. However, in OffCo the forecast is closely linked to the budget. The two processes are interdependent and the level of detail in the information content is the same. Several of the respondents mention the unified nature of the forecast and the budget:

“We mix a little bit the budget and the forecast. Because we use the budget as a forecast (...), so we don’t differ as we should”

(Respondent 1)

“It is exactly the same. The forecast is actually taking the new information into account”

(Respondent 9)

“You are effectively updating the budget as you go along [about the rolling forecast]”

(Respondent 5)

There is also uncertainty about to what degree the budget is used as a target in the company. Indeed, the different respondents all define it as a target, but the assumptions behind it are quickly out of date. It might therefore be an unrealistic target to steer towards when making decisions.

“The budget, well, that’s not very much of a steering document or a steering guide (...), because things change. So, we need a rolling forecast to be actually more accurate, (...) so that we could be active instead of reactive”

(Respondent 6)

In order to get updated and more realistic numbers to evaluate the responsible managers, OffCo uses the rolling forecast in addition to the budget in their performance evaluation. If the rolling forecast was seen as a realistic prediction of future outcomes the people who made the forecast should be responsible for how well it matches with actual results. However, in OffCo the same people are made responsible for deviations between the budget and actual results as with the deviations between the forecast and actual results. This indicates that the rolling forecast has a target-oriented twist. As discussed by Bogsnes (2016), this could lead to either a bad forecast, a bad target, or both.

5.3.3 The board's relationship to the budget versus the forecast

When reporting to the board, OffCo uses only the budget where variances between actual and budgeted numbers are commented on. The board have a strong relationship with the budget, and they know the assumptions for it. There are updated forecasts available on consolidated level giving more relevant information on the financial development in the company. However, it is the budget that the board is interested in, even though it is quickly outdated due to the uncertain market. The CFO explains how the board have limited time to go through the numbers. It would be challenging getting to know new numbers when reviewing the performance of the company:

“Normally, when we are commenting to the board and so on, we comment against the budget. But we have the [forecast] numbers on consolidated level as well. Because, if you see the numbers like the board are doing and they have less time to spend on it, you are putting to many variables into the equation. Because you have three forecasts during the year, and if you then comment against the budget and all the forecasts then it is suddenly becoming a bit comprehensive.”

(Respondent 9)

However, there are challenges connected to the use of the budget when reporting to the board. Questions are raised on the value of the information corporate controllers are providing to the board. They want to be a business partner where the provided information is adding value to the decisions that are made. But it seems to be challenging when the budget is quickly outdated.

“What kind of decisions are made based on us reporting against the budget that is 6-8 months out of date? (...) And then we end up writing this same comment for 9 months. There is no real value adding work there. Nobody is reading it and making any decisions based on that information we've provided to the board. That's a challenge I think.”

(Respondent 2)

Different researchers describe how the budget is a commonly used tool for performance evaluation and control purposes (Barrett & Fraser 1977; Samuelson 1986). By analyzing

variances between budgeted and actual results, variances can be acted upon. But for OffCo the information and assumptions from the budget is outdated at the point where it is used for reporting. As described earlier, the rolling forecast is what provides the information that decisions and continuously planning are based on. As respondent 2 explains, it is hard to know what value there is of the information that the board is given, as it does not drive decision-making. Due to market conditions OffCo is not able to plan with a sufficiently high degree of certainty, and this makes it challenging using the budget for control purposes and evaluation. This is in line with the literature presented by Bruns & Waterhouse (1975) on how a high level of uncertainty hinders effectively use of budgets for control purposes. However, respondent 2 emphasizes that even though it is outdated, it will give a base to do performance management against:

“Obviously, it [the budget] gives you a base to do performance management against even though it is outdated. And like I’ve already said, the board, at least, are really comfortable with the budget and the assumptions in the budget since you’ve only got this one point in time where you’ve assumed the assumptions for the following year. If you’re changing the assumptions every three months, it will be a lot more difficult for people to have a strong relationship to the numbers. It might then be hard to differ between the assumptions in the Q1 forecast and the budget. So, in terms of people who are more distant to the day-to-day operations of the business, it makes them have a stronger relationship to the numbers.”

(Respondent 2)

5.4 Improving the Use of Rolling Forecasts in OffCo

After analyzing the use of rolling forecasts in OffCo some potential improvements of forecasting have been detected. These can make the forecast more accurate, easier and more value-adding for the company. Measures that can be considered are reducing the time horizon of the forecast, reducing the level of detail in the information content and digitizing more of the forecasting process. Another option would be to remove both the budget and the rolling forecast and implement more dynamic management systems (Bogsnes, 2016). This option is however outside the discussion in this study.

5.4.1 Adjust the time-horizon of forecasting

OffCo uses an 18-month rolling forecast. Several respondents raise their concerns about the length of the forecast. Due to the unpredictability in the market, it is challenging to forecast for such a long period. The situation has become especially challenging after the amount of spot jobs started to increase due to the oil price drop in 2014. Contracts have become shorter and often the lead time, which is the time from the contract is won until the execution is started, for projects are short. This makes forecasting challenging as a lot can happen between every forecast.

“It is quite difficult to predict 18 months. I mean, our work activity is very short term. The way the market is at the moment and the type of projects we are involved in they are very short term and small number of days.”

(Respondent 5)

“(...) there is always uncertainties in the data that you produce. So, (...), it could be a disadvantage that even the forecast is kind of out of date very quickly. At least if the market is changing as fast as it is now.”

(Respondent 3)

One respondent explains how it might have been easier to do an 18-month forecast when markets were more stable. But in today’s market, the purpose and value of having an 18-month forecast is somewhat unclear. In the Q2 forecast the company does not look at the months consisting of the following year; they only focus on the predicted development for the six last months of the current year. Also, in the Q4 forecast there are months included in the forecast that the company does not pay attention to. In Q4 the company focus on the first 15-months of the forecast, where the portion consisting of the following year becomes the official budget. It is only in the Q3 forecast prepared in June-July that the company looks at all 18-months of the forecast. But even then, they only quickly go over the number to get an indication of what the next year might look like.

“Apart from the Q3 forecast, you might argue that you don’t do an 18-month forecast, (...) even though it’s officially called an 18-month forecast. Maybe back in the days when markets were better and thing was more stable, it was easier to do an

18-month forecast potentially. But because there are so many vessels working spot jobs and shorter jobs in the regions, it's a lot more volatile EBITDA in the regions."

(Respondent 2)

The rolling forecast was introduced in the company before 2014 when the market became more challenging and unpredictable. As respondent 2 indicates above it might have been easier and more valuable to do an 18-months rolling forecast then. But because of the uncertainty in today's market, the end of the forecasting period mainly consists of "blue sky" projects. With the challenging market the time horizon is too long to know which projects the company actually will have in the end of the forecasting period. This might indicate that the company has not adjusted the time horizon to the market conditions, and that a shorter time horizon could be beneficial. Reducing the time horizon to a 12-month rolling forecast could be a valuable alternative for OffCo. By reducing the time horizon of the forecast, the process of preparing it would be less comprehensive.

"I think because it's a lot of uncertainty, what I've seen is that towards the end of the (...) forecasting period (...) almost everything will be what we call "blue sky". That means that (...) there is no firm projects behind it. So, that indicates then that you, or in my view at least, that we should maybe have a shorter forecast period."

(Respondent 1)

"So, why are we doing 18 months when it is very difficult to foresee what is going to happen 12 months out, little alone 18 months?"

(Respondent 5)

5.4.2 Reduce the level of details in the forecast

The budget has a high detail-level as it represents the financial plan for the year. For OffCo it should also include some stretch targets and reflect the overall strategy for the group/regions. This is in line with the theory on how budgets are used for planning and target setting in companies (Barrett & Fraser, 1977; Hansen et al., 2003). But maintaining the same level of detail in the forecast as in the budget requires large effort for OffCo. Similar to the budget process, the process of forecasting requires a large effort for the employees and managers involved in the process. Even though the budget process is heavier and more time

consuming, forecasting still takes up both time and resources in the organization. This is challenging for the company as valuable time is used on forecasting that could have been used on making important decisions.

“(...) one challenge is that it takes up time for the organizations. And I think that it can be a challenge at least sometimes because if you have the management and myself and the finance manager and everyone kind of caught up in this forecast process that goes on for, say 4 weeks each quarter. That’s quite a lot of time they could have spent on making important decisions concerning the organization, and which projects we’re gonna try to win. We’re kind of tying up a lot of resources in this process cause you need input from a lot of different people when you do it.”

(Respondent 3)

By having the high detail-level in the rolling forecast, OffCo risks confusing accounting details and useful management information. When having such a detailed forecast, there will be a large number of variances that must be calculated and explained. In addition, the process of preparing the forecast takes up valuable time. Like respondent 3 emphasizes, the time used for maintaining the detail-level in the forecast could instead be used for important decision-making in the company. There is a trade-off between time used to gather information and detect variances, and the time used on useful analysis. The more detail, the less time there is for analysis.

To improve the rolling forecast, it could be beneficial to reduce the level of details in the forecast. This requires the group management and regional EVP’s to evaluate which value drivers that are most important for OffCo’s success. Such drivers should be rooted in the key activities for the company. A careful consideration within the company of their value drivers would help OffCo build up a rolling forecast as an aggregated estimate on a chosen set of parameters. This aligns with how the rolling forecast is introduced in the first place (Bjørnenak, 2014). The literature describe how rolling forecasts should provide vision and direction and be prepared on a summarized level of detail (Montgomery, 2002). Reducing the level of detail in OffCo’s forecast would reduce the complexity and effort in the forecast process, and at the same time give more time for useful analysis.

As discussed earlier, OffCo uses the rolling forecast as a decision-making tool where resource allocation is concentrated around the closest months after the forecast is prepared. An option is to have a detailed forecast for the first months in the forecast as there is more certainty connected to the numbers in this period. This could be beneficial if the detailed forecast is important for the resource allocation. However, in the last months of the forecast there is a high level of uncertainty connected to the numbers, and the detail level should therefore be reduced. There is a cost-benefit evaluation between the workload of forecasting on a detailed level and the value from this information. Due to the uncertainty in the end of the forecast period, the cost can be argued to be higher than the benefit.

5.4.3 Easier process by the use of digitalization

The respondents express a discontent with their ERP system and describe it as a cumbersome system with potential for improvements in terms of efficiency and quality. Uploading data into the system and later making changes in numbers are time consuming processes. A new complementary system is considered to be implemented in OffCo, which have several improvements:

“This is what we are looking to improve now with Prevero. Where people out in the business lines could input their own budgets and templates without sending spreadsheets from their business controller to a department manager, then sending it back again where the business controller then has to copy and paste it into Agresso template and upload it. Basically, if they could have a template where they populate stuff straight away and it gets consolidated up, and you could just have a dashboard view which is basically a live view. So, as soon as someone updates something, the numbers change. (...) cutting down that whole process of inputting data would be a massive advantage and cut down a huge amount of that whole process (...). And you probably get more quality from it as well.”

(Respondent 2)

As respondent 2 describes, the forecast process could be more efficient and of better quality using a faster system where forecast numbers can be directly uploaded without going through excel spreadsheets.

The next step of improvement is to automate more of the process. This would free the managers' time which could be used on decision making and more value-adding activities. More automated forecasting would also be quicker and more reliable. The new system OffCo consider using is a CPM (Corporate Performance Management) system that combines AI and advanced data analytics:

“...it can give you a prognosis for the future (...) based on the historic data. So, for example for all of our departments where we just have the mainly cost, it could kind of create a forecast for you, based on the historic and the actual data that you have in the system already. (...) that would be really helpful. the problem is that it's a very expensive system, I think. So, you have to justify, (...) that you need it.”

(Respondent 3)

This is a system that would help in the process of predicting costs. However, as discussed earlier, the prediction of revenues in OffCo is more dependent on relationships to the customers and the knowledge and experience of the employees working in business acquisition. Hence, an automated process of forecasting revenues may not give the same quality. Moreover, the costs of buying such a system are very high. The company therefore have to do a cost-benefit analysis.

6. Conclusion

This thesis study OffCo's use of rolling forecasts as a management tool. OffCo is a large company delivering subsea services and marine solutions to the offshore industry. The thesis analyzes which drivers are important for the use of rolling forecasts, and how the management tool is used in the company. The purpose of this chapter is to present the conclusion on the problem statement of this study:

Why do companies use rolling forecasts, and how is forecasting used as a management tool?

This study contributes to the existing literature on the use of rolling forecasts as a management tool. Especially, the study contributes to the literature on the drivers affecting the use of rolling forecast. Prior research commonly looks at uncertainty and financial position separately. But this study shows how these drivers might interact. Even though this thesis only studies one company, the findings are transferable to other companies using both budgets and rolling forecasts as a part of their management control system.

In the following section, the main findings of the study are presented based on the research questions and overall problem statement. The last part of the chapter presents a suggestion for further research on the use of rolling forecasts.

6.1 Main Findings

When considering the drivers for the use of rolling forecasts, this study finds that uncertainty and financial position are important drivers. These drivers interact and are amplified by each other. The environmental uncertainty for OffCo is caused by the oil price, where both fluctuations and shocks affect the level of uncertainty. In 2014, there was an oil price shock that increased the uncertainty for OffCo. This uncertainty is connected to the weakened financial position caused by the strong reduction in the oil price. The weakened financial position enhances the consequences of the uncertainty connected to fluctuating oil prices. OffCo is now in a position where they have to secure their survival. This involves constantly evaluating the necessity of downsizing, and thus having an acceptable level of flexibility in their labor is important. To increase flexibility OffCo have reduced their permanent workforce and increased the use of contractors. As a result of the increased uncertainty and

weakened financial position, obtaining updated information through the rolling forecast has become more important for the company.

Prior to the data collection, digitalization was a driver thought to be important for enabling the use of rolling forecast. However, the study finds that this is not the case for OffCo. After analyzing the data, it is clear that the process of forecasting is not dependent on digitalization. Knowledge about customers' needs is important to predict the company's future revenues. Getting information through directly dialogue with the customer is therefore essential. This limits how OffCo can use prediction models in the process of forecasting future revenues. OffCo, however, have an ERP and CRM system that support the process of forecasting and make it more efficient.

In regards of the forecasting and budgeting process, the study shows that these processes are interdependent. A part of the Q4 forecast is used as a budget for the next year, which is further used for the next year's first quartal forecast. The rolling forecast and the budget have therefore the same level of detail in information content. What separates the two processes are the time and people involved. The forecast process takes less time because the cost base for the departments are set in the budget process, and fewer meetings need to be held.

The most important purposes of the rolling forecast in OffCo are decision making, resource allocation, and planning. As the forecast is updated each quarter it provides the company with newer and more reliable information than the budget. For performance evaluation, OffCo uses both the rolling forecast and the budget in their monthly variance analysis. This indicates that the forecast might be target-oriented. The unified process of budgeting and forecasting also makes it unclear whether the rolling forecast is a prediction of future outcomes or a target. It can be questioned whether the rolling forecast in OffCo is in fact more like a rolling budget, where the budget is updated with new information every quarter.

Findings of the study show that OffCo might have some potential improvements in the process of forecasting. Measures to be considered are reducing the time horizon of the forecast, reducing the level of detail of the forecast and digitizing more of the forecasting process. These improvements can contribute to make the forecast more accurate, easier and more value-adding for OffCo.

6.2 Limitations

There are limitations and shortcomings related to this thesis. Regarding the methodological choices that have been made, these are discussed and explained in the method chapter. Further, there are limitations in terms of variation and time. The variation perspective concerns a limitation in data collected because of a relatively small selection of respondents. This may not be large enough to make statistical generalization, and the findings could be different if a larger selection was studied.

As the study only look at one company, the findings of the thesis are less generalizable than if several companies had been included. If the same findings were found across several companies, the generalizability of the study would probably have been strengthened. However, the study can be used for generalization by comparing with other similar cases. It can also be used for theoretical generalization by exposing theoretical strengths and weaknesses.

Further, the time perspective concerns limitations in the time available for the study. This is a master thesis that has a time span from January 2019 to June 2019, and thus is limited to half a year of research. Conducting the study over a longer period or at a different point of time, might have provided different findings.

6.3 Suggestions for Further Research

Some of the findings in this thesis may be the source for further research. This thesis found that there is a confusion in OffCo around whether the forecast is a prediction of future outcomes or a target. The budget serves as a target, but it is quickly outdated. How the rolling forecast is used in the company raises the question on whether it is more like a rolling budget, where the budget is updated every quarter. This shows that separating clearly between rolling forecasts and budgets may be challenging. It could be interesting if further research focused on the use of rolling forecasts in connection to the budget. Such research could focus on the interaction between forecasting and budgeting, and what value there is in using both tools for management control.

Like mentioned, it is a limitation that the study only looks at one company. To generate more generalizable results, it would be interesting to study the use of rolling forecast across several companies in different industries. This can give clearer indications on why companies use rolling forecasts and how forecasting is used as a management tool. It would be interesting if the companies would have different financial positions and that the environmental uncertainty for the companies are different. One of the findings in this study is that the most important drivers for the use of rolling forecasts in the company are uncertainty and financial position. It could therefore be interesting to see if these drivers could affect the importance and use of rolling forecasts.

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8. Appendix

8.1 Appendix 1: Information for Participants in the Study

Information about participation in research project

Background and purpose

This thesis is a part of the master's degree at Norwegian School of Economics where we specialize within Business Analysis and Performance Management (BUS). The master thesis is conducted as a part of the research project FOCUS Action (Future Oriented Corporate Solutions). Our research focuses on the role of rolling forecasts, and how the roles change under environmental uncertainty and when access to digital technology increases.

The interview includes questions around the budget, rolling forecasts, uncertainty, technology and financial position. The interview is based on the informant's professional views, opinions and thoughts. Questions are prepared based on a theoretical review of literature on budgets and forecasts.

What does participation in this study involve?

The interview lasts for maximum 60 minutes, and takes place where the informant prefers. Time and date for the interview will be coordinated by our contact in the company. The interviews will be recorded if the informant approves this. Of personal data, only names will be stored until the thesis is handed in. Names will be saved in a separate document where names are connected to an informant number. When transcribing the interview, we only use the informant number.

What happens with the information about you?

All names will be anonymized using informant numbers. The personal data will only be available for us and our supervisor. Your name is the only personal data we have access to, and this will only be used to simplify our processing of the interview data. We will ask the informant about their professional views and opinions, not about private information. The research paper is confidential, but it will be published when the confidentiality agreement reveals.

Our research paper can be used later in the research project FOCUS ACTION, but all information will then be anonymized.

The project ends at 01.06.2019

Your Rights

As long as you can be identified in the material collected, you have the right to:

- get insight on what personal data is registered about you,
- get personal data about you corrected,

- have personal data about you deleted,
- receive a copy of your personal data, and
- send a complaint to the Data Protection Authority about the use of your personal data

What gives us the right to use your personal data?

We will process your personal data based on your consent.

Voluntary participation

Participation in our research study is voluntary, and you have the opportunity to withdraw whenever you want without reasoning. If you withdraw, all information about you will be anonymized, even if our study is not finished.

Our research study is reported to the Data Protection Authority.

We look forward to the interview, and hope to get an insightful and constructive talk. If you have any questions regarding the interview, you may contact Synnøve Bernes by phone +47 902 60 837 or e-mail synnove.bernes@gmail.com .

Thank you,

Best regards

Synnøve Skjervheim Bernes
Malene Blindheim

Declaration of consent

I have received and understood information on the project *Master thesis by Norwegian School of Economics, FOCUS Action*, and have been given the opportunity to ask questions regarding the project. I consent to:

- participate in the interview
- that the interview can be recorded

I consent that my personal data is processed until the project finished, 01.06.2019

Signature project participant

Date

8.2 Appendix 2: Interview Guide

Interview guide

Thank you for participating in this interview. Our thesis is a research project to study the role of rolling forecasts compared to the budget, and how these roles change when uncertainty in the environment changes. We will now go through a semi-structured interview based on predetermined questions, but may ask follow up questions when necessary.

You have received an information sheet regarding the study and the purpose of this interview. To ensure you understood your rights regarding the participation in this study, we quickly list them before starting:

- Your name is the only personal data that will be stored connected to an informant number.
- You have the opportunity to withdraw from the study whenever you want.
- The information collected through these interviews can be used for further research, but all information will be anonymized after 01.06.2019 when our research period is finished.

Do you have any questions before we start the interview?

Part A. Introduction

1) Information

- a) Information about the interviewers, the purpose of our thesis and how this can benefit the organization.
- b) Information about anonymity, formalities and request for approval to record the interview etc.

2) Initial questions about interviewee

- a) Could you please describe your position at the company?
- b) How are you involved in the process of budgeting and forecasting?

Part B. Financial planning within the organization

The Budget

- 1) Budgeting process
 - a) Could you briefly describe how the budgeting process is carried out in your part of the company?

- 1) Role of budgeting
 - a) What are the most important purposes of using a budget in your company?
 - b) What are the challenges related to achieving the purposes of the budget?
 - c) What are the advantages of using the budget in order to achieve its purpose?
 - d) Do the company use variance analysis to compare the budget and actual results? Are employees held accountable for these variances?
 - e) Do you consider the budget a target for the fiscal year or an estimate of the likely achievable financial outcome at the time when the budget is prepared?

Rolling Forecast

- 1) Forecasting process
 - a) How is the process of preparing forecasts in your part of the company?
 - b) What are the most important parameters included in the forecast?
 - i) Could you describe the level of details in the forecast?
 - c) Why do you think rolling forecasts was introduced in the first place?

- 1) Role of forecasting
 - a) How do you understand the purpose of using rolling forecasts?
 - b) What are the advantages of using rolling forecasts?
 - c) What are the challenges of using rolling forecasts?
 - d) How is the rolling forecast used for decision making?
 - e) What do you consider to be the main differences between the role of rolling forecast and the role of the budget?
 - f) Are leaders held accountable for differences between forecasted and actual results?

Part C. Environmental uncertainty

- 1) What do you consider to be the most important factors of uncertainty in the environment your company operates in?
- 2) How does uncertainty affect the roles of the budget and rolling forecasts?
- 3) How does uncertainty affect the level of accuracy in the forecasts and budget?
- 4) *Flexibility is an important factor to handle changing business conditions.* Could you describe how flexible the company is to adjust costs and resources when business condition change?

Part D. Financial position

- 1) Your company has been through dramatic changes in market conditions. Has these changes had any effect on the purpose and use of budgets and rolling forecasts?

Part E. Technology and digitalization

- 1) Which digital tools is used in the process of forecasting?
- 2) Which digital tools is used in the process of budgeting?
- 3) How do you perceive the value of these digital tools?
- 4) How do you think forecasting could be improved by the use of new technology?