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How insourcing affects knowledge: A case study of a large public Norwegian institution

Master's thesis

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The content of this thesis is the responsibility of the authors.

Trondheim, May, 2024

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Abstract

As we are moving towards and information-based society, knowledge becomes more and more important. However, in recent years, public institutions have received smaller and smaller budgets, and thus the institutes must find ways to cut costs. Our case institute has chosen to cut cost by insourcing. They have chosen to replace IT-consultants with their own IT-personnel.

In this thesis the group explores: the sourcing strategies of the case institute, how those strategies affect the institution's knowledge base, and how they currently use consultants with the new sourcing strategy. We have explored the topic in a case study, where the method consisted of 7 semi-structured interviews with managers in the institution's IT division. The data collected from these interviews were used to perform a thematic analysis. From this analysis we ended up with 3 main themes: "Insourcing & Outsourcing, Environment, and Knowledge", each with its own sub themes.

These results were explored in light of the literature. We used "Tacit Knowledge Transfer, Knowledge based View of the Firm, Knowledge as a Resource, and Sourcing Strategies" to contextualize our findings. We discuss: the institution's sourcing strategy and how it relates to their government mandated plans for budget cuts, how the consultants are used to transfer knowledge to the internal personnel that is replacing them, and how the institute prioritizes key knowledge areas. Finally, we summarize our findings and present theoretical implications, ideas for future research and practical implications.

Sammendrag

Etter hvert som vi beveger oss mot et informasjonsbasert samfunn, blir kunnskap mer og mer viktig. Men i de siste årene har offentlige institusjoner fått mindre i budsjett og derfor må institusjonene finne måter å kutte kostnader på. Vårt case institutt har valgt å kutte kostnader ved insourcing. De har valgt å erstatte IT-konsulenter med eget internt IT-personell.

I denne oppgaven utforsker gruppen: sourcing strategier til caseinstituttet, hvordan disse strategiene påvirker institusjonens kunnskapsbase, og hvordan de i dag bruker konsulenter med den nye sourcing strategien. Vi har utforsket temaet i en casestudie, hvor metoden vår bestod av 7 semistrukturerte intervjuer med ledere i institusjonens IT-divisjon. Dataene samlet inn fra disse intervjuene ble brukt til å utføre en tematisk analyse. Fra denne analysen endte vi opp med 3 hovedtemaer: "Insourcing & Outsourcing, Environment, and Knowledge", hver med sine undertemaer.

Disse resultatene ble utforsket i lys av litteraturen. Vi brukte "Tacit Knowledge Transfer, Knowledge based View of the Firm, Knowledge as a Resource, and Sourcing Strategies" for å kontekstualisere funnene våre. Her diskuterer vi: institusjonens sourcing strategi og hvordan den forholder seg til deres statlige mandatplaner for budsjettkutt, hvordan konsulentene brukes til å overføre kunnskap til internt personell som erstatter dem, og hvordan instituttet prioriterer sentrale kunnskapsområder. Til slutt oppsummerer vi funnene våre og presenterer teoretiske implikasjoner, ideer for fremtidig forskning og praktiske implikasjoner.

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1   Introduction

We are moving towards a information based society and economy, where knowledge is the most valuable resource (Webster, 2014). With knowledge becoming such a vital part of the economy, firms revalue what type of knowledge should be core to their operation. Firms need to make sure they possess enough core competences in-house to ensure functionality (Curado and Bontis, 2006). A method to achieve this has been *insourcing*: hiring internal personnel to cover knowledge vital for the firm, instead of relying mostly on outsourced work (Curado and Bontis, 2006).

In the last century the consultancy industry has had a great period of growth, making double digit percentage growth (Gitnux.org, 2023). Partially due to new technologies being introduced into the public and private sector, with companies needing knowledge and expertise on the use and application of said technology. It is therefore not surprising that there has been an increase in the total number of consulting firms, both big and small. Knowledge is after all the resource consultants sell, both as knowledge transfer and expertise for hire (Evers and Menkhoff, 2004).

In Norway, much of the clientele for consulting firms are public institutions (Lanestedt, 2022). This alone would make further research into the subject worthwhile, as the consultancy industry has become such an integral part of these public institutions and their value creation. However, in recent years in Norway, the biggest public clients of consulting firms are scaling down their use of consultants (Aftenposten.no, 2020).

1.1   Motivation

When the group began looking for a topic to study, we quickly leaned towards consultants, and then began looking into consultants in the public sector. As for the exact topic, we entertained a few different ideas, including the hiring process for consultants, and differentiation between the firms. Then we caught wind of the topic we ended up investigating further: the public sector's hiring of internal developers, in positions previously filled by IT-consultants, so-called: *insourcing*.

Insourcing as a sourcing method has been less researched compared to the alternative of outsourcing, especially in the field of Information Technology. In the last couple

of years several public companies have started insourcing all or parts of their IT departments. This is a departure from the heavy use of consultants in IT, that has been the norm earlier. Due to this recent developments, we found the topic quite interesting.

The goal of this study is to delve into this phenomenon, and examining the effect it has on the knowledge-base of the institutions.

1.2 Research Question & Topic

As mentioned, we chose to write about insourcing in the public sector and the role of the consultant, these serve as our topics. The thesis gives insight into the value of consultants, namely the knowledge they possess and how they utilize it. Knowledge is a key resource in the modern market and its utilization is vital for the value-creation in many of today's firms (Curado and Bontis, 2006). That is why for our topic, we developed the following research questions and sub-questions:

- How insourcing IT-personnel in positions previously held by IT-consultants in a public institution helps it strengthen and maintain knowledge?

  - How a public institution uses IT-consultants now, compared to how it used them in the past?
  - Why a public institution is insourcing IT-consultants and what are the ramifications on it's knowledge base?

By studying these questions the group aims to find out the effect insourcing has on the IT-division's institution-specific domain knowledge, and the value this knowledge has for the institution. The second question looks at how the firm is currently using IT-consultants, compared to how they used them in the past. This is in order to understand how the public institution uses consultants. Furthermore, we aim to understand how the shift in sourcing strategies change their usage. The third question asks why specifically the institution chose to insource, and the strategy's effects on their knowledge base. As we know, the institute has received a lower budget, but why choose to insource? We also seek to find what are the benefits, and how do they affect the knowledge within the firm.

1.3 Scope

The scope of this thesis will be a case study of one public institution and their insourcing strategy of IT-positions in Norway. The study will be conducted in the form of interviews on a sample of 7 managers and IT-partners that has both internal employees and consultants working for them. As this is a master's thesis, it will last from January 2024 until May 2024, with the interviews being conducted once in March 2024.

In order to limit the thesis, and to ensure enough data is collected about subjects to draw conclusions, other positions will not be interviewed. This includes the case-firm's senior leadership, IT-personnel and the consultants.

The theoretical framework of the thesis includes: "Knowledge Based View of the Firm, Tacit Knowledge as Resource, and Sourcing Strategies". Knowledge based view of the firm will contextualize knowledge as an important resource and give us a framework for evaluating the effect of insourcing and outsourcing. The knowledge that the thesis discusses is tacit firm-specific knowledge as described by the informants. This knowledge is important for the day to day operations. Insourcing will be viewed mainly as an opposite of the alternative of outsourcing. Outsoucing focuses on consultants, even if they work on-site. Economics will not play a role in the theoretic framework of this thesis, rather it is seen as a integral part of the context surrounding the case.

1.4 Thesis Structure

The following chapter will include theoretical frameworks, where we present relevant literature for the discussion chapter. Next, in the methodology chapter, we present the case study in detail, explain the used methods, justify our choices taken throughout the thesis and criticize our methods. Following this, in the results chapter we present our findings from our analysis of the data. Next, using the theory we presented we discuss the results using an academic frame of reference and attempt to answer our research questions in the discussion chapter. Lastly, we summarize our thesis, give both theoretical and practical implications, and ideas for future research.

2 Theoretical Perspectives

In this chapter, we will present the relevant theoretical frameworks for our thesis, which will be used to place our findings in an academic frame of reference. This chapter is divided into two main sections. In the first section we will be presenting Resource-based view of the firm (RBV) & Knowledge-based view of the firm (KBV) and different definitions of knowledge. Furthermore, in the second section, we will be presenting insourcing and outsourcing as a business strategies, and the theory surrounding them.

2.1 Knowledge-Based View of the Firm

2.1.1 Defining Knowledge

Throughout this thesis we will be using the word "knowledge", but what do we mean by knowledge? Cambridge Dictionary has the following business English definition of *knowledge*: "skill in, understanding of, or information about something, which a person gets by experience or study" (Cambridge.org, 2024). To have knowledge is to understand, and knowledge among the workforce is crucial for employees to perform their tasks. In the context of a firm, knowledge is understanding how to perform their everyday job, including knowledge about the use of software and hardware, as well as the deeper understanding necessary to solve a complex problem or task. For business managers, knowledge is increasingly seen as a resource to be managed on similar terms to other resources. It should be cultivated, and its strategic use is vital to success of the firm (Curado and Bontis, 2006).

However, for our thesis we will be mostly referring to the term *tacit knowledge.* Accurately defining tacit knowledge is difficult in theory, as the concept itself is abstract, whilst also being a familiar experience among managers and employees (Kucharska and Erickson, 2023). Tacit knowledge was first coined by Micheal Polyani in 1962, and has it's other counterpart, explicit knowledge (Dampney et al., 2002). Polanyi (1962) states that tacit knowledge is "knowing a thing by relying on our awareness of it for the purpose of attending to an entity to which it contributes". Here Polyani refers to tacit knowledge as the act of knowing something by being aware of it and then using that awareness to do something. For example, a person would know how to ride a bike by simply being aware of how to, and then doing it.

In other words, we learn and use tacit knowledge by internalizing it. Tacit knowledge is also accumulative, as we add our own personal experiences to our personal knowledge of the subject (Reed and DeFillippi, 1990).

Additionally, Casonato and Harris states: "Tacit knowledge includes skills, experiences, insight, intuition and judgment. It is typically shared through discussion, stories, analogies and person-to-person interaction; therefore, it is difficult to capture or represent in explicit form" (Dampney et al., 2002). Casonato and Harris explains that tacit knowledge can be understood as intuition and skills, which are difficult to capture and represent. Tacit knowledge is difficult to transfer and often requires an intimate relationship between mentor and apprentice to transfer effectively (Hizar Md Khuzaimah and Hassan, 2012). Furthermore, tacit knowledge is often shared orally and intuitively by watching (Dampney et al., 2002). Therefore, transferring tacit knowledge between two people takes time and effort. Essentially, tacit knowledge is knowledge one knows intuitively, and therefore is difficult to transfer to other people. However, when shared, is often shared in an intimate relationship between parties.

In contrast to tacit knowledge, there is explicit knowledge. Explicit knowledge is knowledge that is acquired through books and texts (Dampney et al., 2002). For example, if a person were to read the fact: "Paris is in France", the person would gain explicit knowledge of Paris. Explicit knowledge is often in the form of records, data and information. Therefore, it is easier to transfer compared to tacit knowledge (Dampney et al., 2002). Going back to the bike example, one could argue that one can learn the theory of how to ride a bike by reading a book, but actually doing it is completely different, and is therefore still categorised as tacit knowledge (Polanyi, 1962). As tacit knowledge can be described as hard to transfer and "sticky", explicit knowledge on the other hand can be described as "leaky", as it is easy to share and can be imitated by competitors (Kirsimarja and Aino, 2015). As mentioned before, this thesis will mostly focus on tacit knowledge.

Another form of knowledge that needs a definition is *domain knowledge.* Domain knowledge can be defined as: "The realm of knowledge that individuals have about a particular field of study" (Alexander, 1992). In other words, to be knowledgeable about a particular topic. The term (translated form Norwegian) was often used by the informants, when describing a type of knowledge, they valued and wanted to keep. They valued knowledge regarding internal systems, software, and procedures, that was built up during someone's tenure of working at the institution. Knowledge

about the field of the institution's IT-department. For the rest of this text, this is the domain knowledge referred to.

2.1.2 Tacit Knowledge Acquisition and Sharing

Now that we know what tacit knowledge is, how does one gain tacit knowledge? In this section we will be presenting methods of acquiring and sharing tacit knowledge according to literature. Learning tacit knowledge is done subconsciously (Polanyi, 1962), and as mentioned before is transferred in peer-to-peer learning (Dampney et al., 2002). Acquiring tacit knowledge depends on one's education and intelligence, but also depends on situational context. And these contexts can be categorized as either "learning-by-doing" or "learning-by-interaction" (Kucharska and Erickson, 2023).

Asher and Popper (2021) present a review of common methods used for acquiring tacit knowledge. Some methods are for example, brainstorming, thinking out loud, sharing opinions, story analysis and reflective interviews. Due to the the methods requiring an active awareness of interacting between parties, these methods are therefore referred to as "learning-by-interaction" (Asher and Popper, 2021; Kucharska and Erickson, 2023). These methods are a formal way of acquiring knowledge as participants proactively reflect and discuss for the sake of learning.

On the other hand, tacit knowledge is also grounded in practicality and intuition (Polanyi, 1962). Therefore, when acquiring tacit knowledge, one can also go through hands-on experiences to learn (Dampney et al., 2002; Kucharska and Erickson, 2023). For example, observations, tasks, simulations, and experimentation are experiences that lead to tacit knowledge. In their review, Asher and Popper (2021) states that tacit knowledge can be gained through the combination of formal and informal methods and practice. Consequently, when an employee learns how to do a job about 80% of employee learning is gained through on the job experience (Bryans, 2017). This is an informal, incidental and a personal experience. Acquiring knowledge by going through informal personal experiences can be referred to as "learning-by-doing" (Kucharska and Erickson, 2023).

Internalizing the acquired tacit knowledge is imperative to be able to share the knowledge with the rest of the firm (Kucharska and Erickson, 2023). Internalizing the knowledge means that the employee has a deeper understanding of the knowledge

and is aware of how a topic works (Wipawayangkool and Teng, 2016). Specifically, internalizing is when tacit knowledge moves from the unconscious level to the conscious level (Kucharska and Erickson, 2023). For example, a dancer will internalize a dance motion, not when the dancer is able to do it, but rather when they are able to explain how to do it.

Consequently, internalization will also grow the employee's self-confidence, and they will voluntarily and informally share more of their own knowledge to other employees, and overall will strengthen the firm (Wipawayangkool and Teng, 2016). However, internalization takes time and is therefore more favourable for the firm to acquire knowledge quicker by learning with person-to-person experiences (Kucharska and Erickson, 2023). Internalizing tacit knowledge is important for the firm to know the inner workings of their knowledge base, but is also important for sharing and arguably preserving said knowledge.

2.1.3   Resource-Based View of the Firm

Before presenting the Knowledge-Based View on the firm (hereby referred to as KBV), we first present the Resource-Based View of the firm (hereby referred to as RBV), as the former is an extension of the latter (Grant, 1996). The firm's RBV is a term coined by Wernerfelt (1984) and later developed by other scholars, such as Barney (1991). It is a view that explores how firms can achieve a sustainable competitive advantage and create value through the management of assets, internal resources (and later knowledge). By managing resources, we refer to the act of picking, creating and combing resources (Barney, 1991). RBV postulates that the performance of a firm can be explained by possession of a valuable rare resource, which gives the firm a rent from their position (Wernerfelt, 1984).

Lockett et al. (2009) gives a good overview into the reason RBV emerged and why economists believe it helps give the firm a sustainable competitive advantage. A sustainable competitive advantage meaning an advantage over their competition that will result in an increase in market share and has a lasting effect. They state that RBV sees firms as collections of both physical and human resources to be managed. Wernerfelt (1984) historically describes the resources in RBV as referring to a determined collection of resources or assets which are linked at least "semi-permanently" to the firm. According to Lockett et al. (2009) and Madhani (2010), to achieve a sustainable competitive advantage a firm must ensure that their resources

fulfill the "VRIN" criterion. VRIN stands for **V**aluable, **R**are, **I**nimitability, **N**on-Substitutability (Barney, 1991).

Valuable resources are those that can be leveraged to exploit opportunities in the firm's environment, and/or neutralize existing threats. Rare resources are those that have a limited supply, in addition they must not be equally distributed across the firm's competition, both current and potential. Inimitability refers to the extent to which the resources are difficult to replicate by the competition, be it for ambiguity, complexity, or other circumstances. Non-substitutability of the resources implies that one's resource cannot simply be substituted by another resource to achieve the same effect.

If all these conditions are fulfilled, then the resource can be used to give a sustainable competitive advantage. However, having the resources are not enough, they must be utilized strategically, the firm must have the capability to use them, and they must be part of the firm's strategy to grow (Pereira and Bamel, 2021). Meaning that the firm must be in a position to exploit the VRIN resources. Barney (1991) says that the VRIN-values must fit with the firm's market or a new market the firm can reach, and their strengths must be utilized in the competition with rivals. The idea of heterogeneous resources is one of the main principles of RBV (Barney, 1991; Curado and Bontis, 2006). Heterogeneous resources means that resources are different within the market and difficult to replicate.

2.1.4   Back to Knowledge-Based View of the Firm

The firm's KBV is as mentioned, an extension of the frim's more traditional RBV (Grant, 1996). It is a modernized version of the RBV for the present economic context and provides a theoretical binding to the research-fields of intellectual capital as well as organisational learning (Curado and Bontis, 2006). The modernization from RBV to KBV is especially important considering the shift of production from material-based to knowledge-based (Curado and Bontis, 2006), with many firms having knowledge as a key part of both their input and output.

Child and McGrath (2001) notes that one reason for this shift in managerial focus is the changes in firms' economics. Where they go from a production mostly based on material to a production mostly based on information and services. This caused a revaluation of both the firms and their workers. Child and McGrath (2001) point

out that if you look at the core of organisational functions, one would increasingly find knowledge-based workers as the most crucial part of the firm and no other resources.

By understanding Curado and Bontis (2006)'s interpretation of knowledge as a resource, one can connect the two views. Furthermore, they choose to put a distinction between resources that can be fully appropriated by the firm, like liquidity and brand names, from the less tangible assets, such as organizational routines and capabilities. The latter would be known as knowledge-based resources and should be included in the new extension, KBV. This is the main difference between RBV and KBV, in where knowledge is to be considered the most valuable strategic resource (Curado and Bontis, 2006). Due to knowledge being often developed within the firm, it is difficult for competitors to imitate and cannot be substitute with other resources, thus knowledge is a heterogeneous resource and a great foundation for a sustainable and (Pereira and Bamel, 2021). The KBV posits that organisations thrive by creating, transferring, and leveraging knowledge for competitive advantage.

Transferring knowledge within the firm is important, but also difficult. Due to the nature of the knowledge, it can be challenging to share (Dampney et al., 2002; Kucharska and Erickson, 2023). The knowledge's stickiness can hinder the performance of the firm (Szulanski et al., 2003). Therefore, the knowledge's stickiness is a challenge in KBV.

Furthermore, Curado and Bontis (2006) emphasizes the importance of organizational learning in the KBV framework. By having the right cultures and routines, the firm can have a better organizational learning. These routines enable the firm to acquire, change and preserve their capabilities. Using the firm's capabilities, the firm can adapt to unforeseen challenges in the environment (Teece et al., 1997). Furthermore, these capabilities can be considered heterogeneous, as they are hard to imitate and non-substitutable and can only be acquired through tacit knowledge accusation (Kucharska and Erickson, 2023). Thus, the organization can adapt and learn over time (Curado and Bontis, 2006), and sustain their competitive advantage.

The economic value of knowledge increases over time, challenging traditional views of resource depreciation. Wilcox King and Zeithaml (2003) reiterates that knowledge, when cultivated, does not decrease in value. Curado and Bontis (2006) follows the same point describing organisational knowledge as something of a 'miracle resource'. Something that can, in contrast to other resources, increase rather than decrease

in its value through correct utilisation. That applying one's knowledge improves it by sharpening it, combining it with other knowledge, and transferring it into other people's knowledge. Curado and Bontis (2006) emphasises that the ability shares and accumulate knowledge is an important part of adapting to changing conditions, which again is crucial for the firm's survival.

Curado and Bontis (2006) notes that this is the basis for the economic rent creation mechanism in KBV. The economic value of intangible assets, which includes not only knowledge but also organizational culture, reputation, and relationships are considered difficult to imitate and contribute significantly to a firm's competitive advantage. Organisational knowledge presents a tremendous wealth creating potential. Curado and Bontis (2006) and Kim and Mauborgne (1999) point out that contrary to the traditional and finite production resources, knowledge on the other hand can generate increasing returns through its systematic use. Unlike a monopoly on natural resources, knowledge is rare, socially complex, difficult to imitate and does not deplete, but rather accumulates (Hitt et al., 2001). Therefore, one could argue that knowledge gives a more sustainable advantage.

The increasing value of knowledge is why Adler (2002) bring up the importance of retaining knowledge within the firm. When firms prioritize knowledge, developing and retaining employees with key knowledge is of vital importance, as they become the firms' strategic resources. A loss in knowledge not only means a loss in resources, but also represents a loss of time and money in training employees and cultivating their knowledge. An even worse scenario is if the previous employees go to a competitor, and thus their resource will lose both it's rareness and inimitability.

Additionally, knowledge can be used simultaneously in multiple different applications (Wilcox King and Zeithaml, 2003). The knowledge is not tied down to an application for longer than the people in possession of the knowledge is, and with effective management can be moved around as they become available. In other words, knowledge is tied to a person, and that person can be moved and redeployed somewhere else, and thus knowledge is a flexible resource. Most knowledge-based resources have intangibility and its dynamical nature at their core. This allows for idiosyncratic development, by way of causal ambiguity and path dependency.

2.2 IT-Insourcing & Outsoursing

Sourcing can have different meaning depending on the field of work. In management and manufacturing, it refers to searching for alternatives in locations to handle part of your workload, be it part of production or support roles. The reason this should be considered by firms is that sourcing can helps the company's meet their key objectives like quality, and cost (Zhaohui Zeng, 2000). In this section we will be discussing two types of sourcing: insourcing and outsourcing, how they relate to firms in general and IT-divisions specifically. We will explore both due to much of the research in the field is on IT-divisions.

2.2.1 Outsourcing

As outsourcing in the better-known term of the two sourcing strategies, we have chosen to present it first. In the book "The Outsourcing Handbook" by (Power, 2006), sourcing can be defined as: "the act of transferring work, responsibilities and decision rights to someone else". *Outsourcing* is when a firm decides to hire an external third-party organization to complete specific tasks for them. It uses an unaffiliated organization's workforce as well as their other resources to complete tasks, services, and manufacturing.

Outsourcing of a firm's IT-division is a phenomenon that took full force in the 1990s (Dibbern et al., 2004). A large number of companies started to outsource their IT-departments for several reasons: including cost cutting measures, scalability, and streamlining towards the company's core competences (Dibbern et al., 2004). This interest was triggered, according to Hirschheim and Lacity, 2000, by the Kodak's outsourcing "success story" in 1989, where Kodak outsourced a significant portion of its IT operations to external partners in order to cut costs. This event marked a shift in the sourcing of IT activity, leading other Fortune 500 companies to follow suit.

The Hirschheim and Lacity (2000) and Qu et al. (2010) notes the growth of the IT outsourcing market and explores various aspects of outsourcing decisions through case studies, surveys, and identification of best practices. They reach the conclusion that the decision of outsourcing comes from stakeholders within the firm. Mentioned in depth by Hirschheim and Lacity (2000), multiple stakeholders have an interest

and ability to affect the sourcing process. Thoughts of outsourcing is often initiated by the firm's leadership, with those previously mentioned goals in-mind. Typically, after prompts from the leadership, managers will explore the possibilities outsourcing provides and are the ones to take care of the process.

Power (2006) gives guidelines of when and what to outsource. When Kodak did their outsourcing, they were primarily financially motivated. Power (2006) states that outsourcing is motivated by the strategic advantage it can offer. Several different types of outsourcing exist, they vary in scope, location, and type of work, and the strategic advantage offer by each one differs. In this text the focus is on outsourcing to consultants. This type of outsourcing is for the most part on-site knowledge-based project work.

As an organisation becomes larger, or more complex, outsourcing to third parties, like consultants, becomes necessary. These third parties are best used when they facilitate development of activities that are outside the responsibility of the internal employees. Consultation is a multifaceted job, it can involve implementation of techniques, training clients, or offering advice to help clients identify and solve their own problems. Among consulting firms one would be able to find variation in style and type, including highly specialized ones with expertise in different fields, ones providing prepackaged solutions, and process oriented consultants who can work without predefined solutions (Kakabadse, 1983).

A big part of hiring consultants is access to a wealth of resources, such as knowledge. They tend to be in possession of highly updated knowledge in multiple fields, and the clients can seek out the individual consultants that match their needs (Power, 2006). The knowledge consultants possess that is of value is often tacit. Such as a strong understanding of a type of software, practical use of theoretical frameworks, etc. Since tacit knowledge is harder to directly copy than explicit knowledge, it holds more value as an in-imitable resource.

Expertise and specialized knowledge has become key in our modern world. For example, with IT becoming more and more sophisticated, it also becomes more complex, requiring unique expertise in different fields. Some types of expertise are necessary for a firm, but simply to niche to keep in-house at all times. In these cases, Power (2006) recommends outsourcing to consultants. This lets the client-firm still have access to valuable knowledge yet can save them money by not paying for it for longer than they need it. Additionally, the fact that that obtaining personnel

with this expertise can be difficult. This is becoming increasingly relevant in the IT sector, where new technologies are constantly being launched, and few experts exist.

Academic research around IT-outsourcing indicates a general consensus that organizations can cut IT costs through outsourcing (Girth et al., 2012). This mainly refers to full outsourcing to external companies. For consultant use this can also be true, depending on the usage, like previously mentioned, hiring experts can save cost. Since this knowledge cannot easily be learned by reading documentation, or similar methods, it would take the client-firm a lot of resources to establish all knowledge they hire consultants for internally. It is therefore often cheaper to outsource to consultants, rather than have all expertise in-house (Power, 2006).

There are however ways to start accumulating the knowledge within the firm. The tacit knowledge can be absorbed by the client-firm's personnel, through working together with the consultants, in a "learning-by-doing" as mentioned in 2.1.2. This tacit knowledge takes time to manifest, so knowledge transfer from consultants usually takes place over a longer stay, where they work together (Power, 2006). Consultants can be used to train internal personnel. This is especially useful if the consultants are used to cover core areas of the business that should be an area for employees.

Consultants are a kind of outsourcing that typically runs on short contracts that gets renewed continuously as needed. These are advantageous from the client's side as discussed by (Hirschheim and Lacity, 2000). In their discovery, firms with outsourced contracts to third parties could stop renewing them if they were poorly negotiated or no longer advantageous. This lends to a bit of flexibility in outsourcing to consultants as they can be let go on a short notice. This also means that they are a quick expense to cut, should the need arise.

As mentioned by Power (2006), third parties are beneficial when facilitate development of activities that are outside the responsibility of the internal employees. So, on the flip side, using consultants as a major part of the firms' core, is a vulnerability. As consultants are temporarily and can leave when a contract is up. It can have a negative impact on the firm's domain knowledge, as the consultants takes with them their knowledge, along with any experience they have gained. Using consultants over long terms, also removes part of their benefit, as a consultant typically cost more than an internal employee. So, the firm loses the economic benefit of short term outsourcing.

2.2.2 Insourcing

Moving on to the other type of sourcing, in this section we will be presenting insoucing. As our thesis's topic relates to insourcing, it is imperative to define what insourcing is, and how it is used in this text. After investigating outsourcing, Hirschheim and Lacity (2000) shifts the focus to insourcing, an alternative option that was often overlooked in research. "Insourcing" is a business strategy in which a company decides to source certain business functions internally, rather than outsourcing them to third-party contractors (Dibbern et al., 2004). In other words, insourcing involves keeping or bringing back activities within the organization rather, than relying on external entities to perform them. For this text insourcing should be seen in this context, as the main alternative to outsourcing.

With the aim to investigate organizations that choose to keep their IT activities in-house and their outcome Hirschheim and Lacity (2000) conducts multiple case studies. They find that the insourcing process typically involves evaluating outsourcing, but ultimately choosing to continue or start using internal IT resources. Despite the popularity of IT outsourcing, Qu et al. (2010) notes some firms continue to rely on insourcing for IT, even bringing IT functions back in-house from outsourcing.

As mentioned, most research done around IT-outsourcing indicates a general consensus that organizations can cut IT costs through outsourcing (Girth et al., 2012). However, some dissenting opinions suggest that external vendors may not always offer unique cost-saving benefits compared to internal capabilities (Hirschheim and Lacity, 2000). The existing research on IT sourcing has mainly focused on cost savings, with limited direct comparison between outsourcing and insourcing in terms of performance impact. When studying IT sourcing mechanisms, Qu et al. (2010) focused specifically on Transaction Cost Economics (hereby referred to as TCE) and the KBV. TCE suggests that firms exist to mitigate costs and risks, similar to the RBV, while the KBV extends this by emphasizing firms' gained advantages in knowledge creation, sharing, and innovation when insourcing. The development of IT-enabled business processes (hereby referred to as IEBP), seen as a form of innovation, requires coordination and shared knowledge between IT and business units. This is especially relevant in businesses where IT serves as an integral part of the larger operation, as with unique domain systems.

Qu et al. (2010) suggests that IT insourcing leads to better IEBP than IT outsourcing, due to advantages in coordination and shared knowledge. With coordination, Qu et al. (2010) refers to both within the team and communication with multi layers of the larger firm. Internal personnel know the rest of team/firm better and can utilize this familiarity for increased efficiency. How impactful these are may vary depending on the types of IEBP, stating that the advantages of IT insourcing vary depending on the type of development the company focuses on. With Qu et al., 2010's research suggesting that insourcing has a positive effect on developing IEBP, which in turn has a positive effect on general business performance. Emphasizing the importance of coordination and shared knowledge between IT and business units facilitated by insourcing. This is while outsourcing lacks a statistically significant correlation with business performance. IT insourcing, relying on internal IT departments, is linked to shared knowledge and improved coordination, fostering the development of IEBP. Positive associations are found between IEBP and firms' profitability through Return on Assets (ROA) and market value (Tobin's q), supporting the idea that IT-enabled innovative business processes contribute to improved firm performance (Qu et al., 2010).

Going back to Hirschheim and Lacity (2000), they note that stakeholders have varying perceptions of insourcing success. The original conception of success based solely on financial outcomes is re-evaluated. Senior management typically views success as cost savings, while users and business unit managers prioritize service excellence (Hirschheim and Lacity, 2000). Cost efficiency and service excellence often conflict, leading to dissatisfaction among users when cost-cutting practices result in perceived service degradation. This can cause a dilemma for IT managers as different levels within a company have different views on the matter of IT, making their jobs difficult. Success is subjective and depends on the evaluating stakeholder, highlighting the importance of understanding varied expectations in IT insourcing decisions. The authors point out that choosing insourcing over outsourcing, even with realized cost savings, may not guarantee success due to diverse stakeholder expectations.

In their findings, Hirschheim and Lacity (2000) noticed similarities between the reasons that companies ended up insourcing. They coalesced them into 4 archetypes that best describe the stakeholder whose actions had direct influence on the outcome:

- 1. Senior Executives Enable Cost Reduction: Senior executives, under external pressures, empower internal IT managers to cut costs. Internal bids,

replicating vendor tactics, succeed in reducing costs.

- 2. IT Managers Terminate Failing Outsourcing Contracts: Poorly negotiated outsourcing contracts lead to rising IT costs and reduced service levels. IT managers successfully terminate contracts, rebuild internal IT, and achieve cost reduction.

- 3. IT Managers Defend Insourcing: IT managers initiate outsourcing evaluations for company-political reasons. However, these evaluations point to no result in cost savings or service improvements, despite wishes from the top. These finding are used to justify internal sourcing.

- 4. Senior Executives Confirm IT Value: Insourcing decisions, even without significant cost reduction, are considered successful if they give effectiveness at similar cost. Senior IT executives, with full support from management, validate the cost-effectiveness of internal sourcing.

The four archetypes provide insights into different approaches organizations take in their IT insourcing decisions. Hirschheim and Lacity (2000) concludes that companies can achieve improved IT performance without necessarily resorting to outsourcing. Insourcing success depends on key issues like aligning IT perceptions, senior-level sponsorship, and a fair evaluation process of the sourcing alternatives.

2.2.3 Insourcing vs. Backsourcing

While researching this topic we found that some newer literature also brings in a new term to this particular field of study, namely *backsourcing*. The definition of backsourcing seems a little uncertain in the papers we have read, it seems to refer to parts of a firm that has previously been outsourced and is now brought back in-house. The difference between backsourcing and insourcing, are a little unclear, as the former term is newer and most of the texts using it refers to older text that use the term insourcing. While there seems to be some differences in the intended use of each term, they do have a lot of overlapping use-cases, partly because of insourcing's long tenure. The intended split seems to be insourcing is keeping it in-house, while backsourcing is having it had been outsourced earlier.

For the purpose of this thesis, the term insourcing covers the definition we need and is a more widely understood term, being able to clearly communicate the intent of

the thesis. Both supervisors and informants, as well as unrelated people recognized or understood insourcing as a term. That holds tremendous value for a project and so we have chosen to keep using the term insourcing for the rest of the thesis. However, we wanted to acknowledge the term backsourcing as a newer term that also tries to help tighten the definition of insourcing.

3 Methodology

In this chapter we will present and justify our choice of methodology and research design employed in the investigation of our master's thesis. We will present the case our study is based on, along with details of the case-firm. Furthermore, we will describe our data collection and data analysis processes. Additionally, we critique our methods and look at the dissertation's validity, reliability, and its generalizability. Lastly, we discuss the ethical considerations that are important in this research project.

3.1 Research Design

Before one chooses a research method, one must first choose a research design. The research design addresses the decisions about what is to be studied, who is to be studied and how the study is to be executed. The research design depends mainly on the chosen problem and research questions(Johannessen et al., 2020). Based on our initial research question, we therefore chose to conduct a case study on a public institution that used consultants.

The relationship between research and existing theory can mainly be defined as either inductive or deductive (Bell et al., 2019). An inductive approach is when a researcher gathers empirical data and then uses that data to expand and/or create new theories. On the other hand, in deductive approach, a researcher uses existing theory to create a hypothesis and then tests that hypothesis by collecting data. In our research project, while we start with initial open research questions, we use literature after we gather our data. Therefore, this thesis takes an inductive approach. This inductive approach is most fitting for unexplored contexts and topics (Bell et al., 2019), and due to the new trend of insourcing, our chosen topic is mostly unknown. Thus, taking an inductive approach is appropriate.

We have chosen to use a qualitative method, as this allows for an in-depth exploration of unexplored topics (Bell et al., 2019). The qualitative method is particularly well-suited for capturing the complexity, contextually, and depth, inherent in human experiences and their perceptions (Bell et al., 2019; Denzin & Lincoln, 2018). Our initial research questions required an in-depth understanding and by using a qualitative approach, we can generate rich and nuanced insights into the insourcing

process of the public sector, as well as the underlying effects of the process. This is important as our particular topic and context is new and has not been researched before. We seek to uncover emerging themes and relationships in the data, generating new insights and hypotheses for further investigation. Hence, the qualitative research method is in line with the aim of the thesis.

3.1.1 Case Study

For our thesis, we chose to do a case study. A case study is the detailed study of a real-life phenomenon and its context, by focusing on a person, group, or other unit encapsulating the specific phenomenon (Flyvbjerg, 2011). It is qualitative in design and is often used to gain an understanding of a complex issue by studying the real-life setting in which it occurs. The goal for such a study is to learn as much as possible from the chosen unit sample in question (Flyvbjerg, 2011).

Some of the advantages of using a case study include the ability to study the complex aspects of a phenomenon without oversimplifying it. Specifically, it helps you answer the contextual questions: "how, what, and why" of the phenomenon (Yin, 2003). It lets you capture the context that it is happening in and understand help you understand how and why. When you are doing a single case study, as we are doing in our thesis, it allows for exploration of multiple dimensions of the phenomenon, such as the historical and economical aspects that influence the case. They are also well suited for first exploring a new aspect, theory, or field where other larger studies have yet to take place. Here, they also serve to foster themes suitable for future research (Flyvbjerg, 2011).

No method of study is perfect, and the case study possesses several disadvantages that are worth considering. One of the main criticisms levelled towards case studies are that they can come across as partial, biased, and lacking critical discussion (Flyvbjerg, 2011). The data is gathered from close proximity, meaning that the researcher might have their supposed impartial views affected by contact with the group they are studying. In addition, case studies heavily rely on a researcher's selection of data and its interpretation, these can be influenced by several sources including preferences, personal views, and pre-exiting assumptions. Another point of potential weakness is that while the case study can go quite in-depth, they are based on a rather small sample size and a unique context, they may therefore lack generalizability (Flyvbjerg, 2011). We will explore generalizability further in section

3.5.3.

There are several other types of studies the group could have done; however, the case study is the one we believe best lets us illuminate the topic of interest. We chose case study because we wanted to dive deep into a single firm to study the how, what, and why of the firm's relations to knowledge and how it connected to its use of consultants. We believed these contextual conditions were of importance for the phenomenon, which aligns with the strengths of the case study (Yin, 2003).

3.2   The Case-firm

The group did a deep dive into one firm for our case study. The firm is a large Norwegian public institution with several thousand employees in its service. It is responsible for a total budget frame of tens of billions of NOK granted by the Norwegian government every year. The firm also has a large number of these employees working in the IT-division, spread throughout management and several subdivisions. We focused on the IT-department for the case study. In addition to their internal employees, the firm's IT-division also hires in a large number of consultants to work on various projects, and makes up a large part of their developers, and project managers. Even before the research question had been fully formed, the group knew we were interested in consultants in the field of IT. As such, we searched for a company with an IT-department, that it also used in combination with consultants.

Job positions posted by the case-firm in the last few years, has had an increased number of applicants. The informants attribute this increase to the more turbulent economic times, and state that more people seek the extra safety of public employment in such times. This is also true for senior IT positions, and they have gotten more qualified applicants than they have positions.

As mentioned in the introduction, a general trend in the Norwegian public sector is scaling down their use of consultants. This is a trend that has been going on for the last couple of years, even as consultancy work in general has been increasing steadily. Alongside this cut-down of consultants, the group heard from sources in our own networks, of several firms, both private and public, that was staffing up on internal IT personnel. The case-firm was among these firms that were hiring. During the interviews, we learned that a smaller frame budget in the future was part of the background in the decision making. With an ageing population and below

replacement-level birthrates, less taxes will be brought in. So public institutions will have to prepare to do the same work on a smaller budget.

While politics will not be a focus of the thesis, it is important to bring it up, as it has an undeniable impact on large public institutions, such as the case-firm. In the interviews we asked about changes in the employment directives from the government and if they had an effect on the current rate of internal hiring. The directive stated that a public firm's core operations should, as a baseline, staff full-time internal personnel. The informants told us that they had reviewed the change at that the institution already complied and was unrelated to the insourcing. They did however mention that part of the goal with insourcing was futureproofing with regards to changing governments with different economic visions.

3.3 Semi-Structured Interviews

Semi-structured interviews were chosen for their inherent flexibility, allowing for a dynamic and open-ended exploration of participants' perspectives (Fontana & Frey, 2005). This flexibility is crucial in accommodating the diverse range of experiences and opinions related to providing a comprehensive understanding that might be constrained in a more rigid data collection method.This choice is especially important due to the nature of the thesis's unexplored topic. Semi-structured interviews offer a platform for in-depth exploration of participants' experiences, attitudes, and perceptions. This method enables the group to probe beyond surface-level responses, encouraging participants to more thoroughly articulate their thoughts on the matter (Rubin & Rubin, 2012). In the context of this study, such depth is essential to gain a holistic understanding of the factors influencing the hiring decision.

3.3.1 Population and Informants

When getting in touch with the public institution, we contacted multiple people of interest. We reached out using emails we had found on the case institution's website, LinkedIn.com, and job postings. The informants we sought after were managers and/or who had experience in working with external IT-consultants and hiring for new positions in their IT-department. Therefore, contacting managers who were responsible for IT job postings were quite relevant.

After discussing our thesis via email with our initial list of contacts, informant 5, who we found via a job posting, showed interest and setup an initial meeting with their manager: informant 1. In this meeting we would discuss our thesis and informed them of the type of informants we sought after. After the meeting with informant 1, they recommended relevant informants who had insight and knowledge pertaining to our topic and research questions. This method of finding relevant informants is called the snowball-method. A method where the initial contacts help find and get in touch with even more, relevant informants, who can help answer and solve our thesis (Bell et al., 2019). See Table 1 below, for information about the informants.

Our thesis's research questions are designed to describe a public institution in Norway and so, the case institution is therefore a sample of the population we want to describe. For our thesis, we wanted to do a deep dive into one public institution to capture as much depth and nuance as possible. Specifically, we focused on IT-knowledge and as such sought after an IT-division.

Initially we wanted to hold around 10 interviews, but we ended up conducting 7 interviews, as those were the respondents gathered by informant 1, whom they felt had the most relevant positions and experiences. We have no reason to assume we had reached saturation, however the respondents gave enough insightful answers to work with. Gathering more data just for the sake of more data is redundant when the extra data will not give any value (Jacobsen, 2015). Therefore, after some internal discussion within the group and together with our supervisor, we concluded that the 7 we had was sufficient as it was difficult to gather more informants without asking another public institution, and we were satisfied with the quality of the data. The 7 informants are in different managerial roles and levels in different departments within the same IT-division. All of whom has worked with consultants and are also responsible for hiring. Table 1 presents their positions in the institution and how long each interview took.

Informant #	Job Position	Interview Length
1	Department Director	43min 02s
2	Section Manager	37min 37s
3	IT Partner	53min 20s
4	Strategic Advisor	34min 37s
5	IT Partner	47min 57s
6	IT Partner	23min 32s
7	Section Leader	36min 43s

Table 1: Informant's Job Position & Length of Interview

3.3.2   Interview Guide

Before our interview, we created an interview guide to help us direct the interview (See Appendix 7.1). Since the interview guide is for a semi-structured interview, we had to make room for unexpected answers and ask follow-up questions when the opportunity presented itself. Nonetheless, we also had to have the mindset of breaking free from the interview guide, if the informant said something of interest related to thesis's problem. Furthermore, as we were conducting interviews with different roles within the organisation, we expected that the relevance of each question was going to be different depending on the informant's role.

Before conducting the interviews, the group had a different angle we planned to go with the thesis. After hearing from people in our own network about large scale insourcing in public companies, we wanted to investigate how this affected IT-consultants. Our initial research question regarded the advantages of hiring the consultant as a internal employee, and so the questions in the guide reflects that original disposition. During the interviews we learned that such an event was an outlier, so much so that we pivoted to study the larger picture of insourcing to secure knowledge instead.

During the initial contact with informant 1, the first draft of the interview guide got rejected. The problem was deemed to be a unspecified lower age limit for the informants, and asking for the informants to name other relevant people to interview. A revised application was sent in, and accepted, putting us back on track. This set

back the date of the interviews by about a week, which is valuable time when writing a master's thesis.

3.3.3   Conducting the Interview

All 7 interviews were held digitally as all of the informants were located outside of the city of Trondheim, and therefore it was the most practical option. The interviews were held in the Norwegian language. We used the platform Microsoft Teams to conduct the interviews, and the interviews were recorded on Microsoft Teams to ensure the safety of the data and auto-transcription tools were used to make the transcribing process easier. The data was only ever stored on servers where just the group had access.

In the interviews each group member had a role: either as the one that mainly asked and lead the interview, or the other role of support: taking notes and asking follow-up questions and keeping the interview flowing. We alternated between the roles every interview. We decided to alternate roles so both of us could learn both roles and have an equal amount of responsibility. However, it is important to note that due to alternating roles, the interviews were not uniform and therefore our data collection might be disturbed. Nevertheless, we still tried to conduct the interview as similar as possible. To clear up any confusion, we presented our current roles to the informants before the interview.

All the informants were both relaxed and talkative. This led to clear and concise information and data. Overall, we were satisfied with how the interviews were conducted and the informants' receptiveness to our questions. After the interviews, the group immediately started anonymization of the informants and the data. Any mention of the name of the case-firm was anonymized, as was the personal information of the informants.

3.4   Thematic Analysis

Our chosen method of analysis is thematic analysis. Thematic analysis uses inductive reasoning to analyse by searching for patterns and relationships among our data, without being restrained by previous theory and frameworks (Braun and Clarke, 2006). Usually, a thematic analysis is broken down into 6 different phases as illus-

trated in figure 1 It is important to note that even though the process is portrayed to be linear in the figure, in reality the process can revert back to previous phases due to unexpected findings, patterns and/or new themes from the data (Braun and Clarke, 2006).
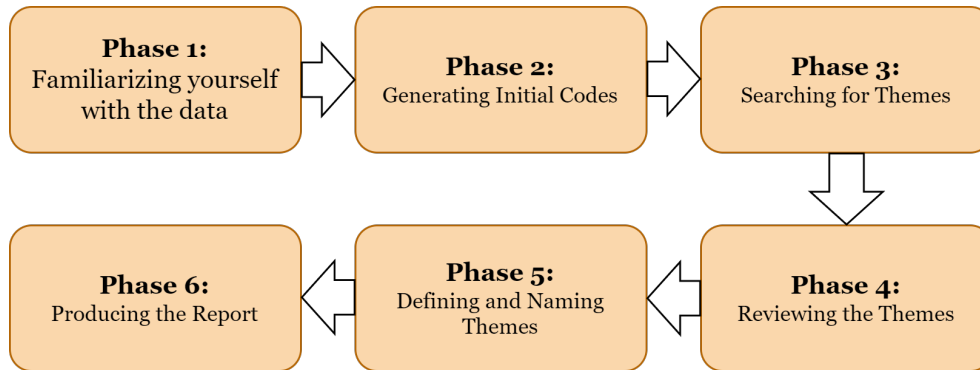

Figure 1: Phases in a Thematic Analysis (Braun and Clarke, 2006)

Before the 6 phases of thematic analysis begins, we start with the 0th phase, which is the transcription of the oral audio data to written data which can be coded. This part of the process can be exhausting, and one should not underestimate how long it could take (Braun and Clarke, 2006). Therefore, we utilised speech-to-text tools to assist us in transcribing the audio. The speech-to-text tools was surprisingly effective, especially considering that the s had local dialects. Nevertheless, the outcome was not perfect, and we still had to ensure that the quality of the transcription was held to a high standard. Therefore, we were also required to manually transcribe and revise the majority of the data. By listening to the audio and transcribing the data thoroughly, we unwittingly became very familiar with the data. Thus, we completed the first phase of the analysis. With our familiarity with the data, we revised our research questions.

After completing the transcriptions, we imported all of the documents into Nvivo, our analysis tool of choice. It is a widespread program used for amongst other, thematic analysis. Letting us work asynchronous, then merging the files afterwards. We began using Nvivo to generate the initial codes and going through the transcription systematically. We coded the data individually and ended up with 175 codes. This was a huge amount of code, but we had created overlapping and similar codes due to having worked separately. Additionally, we had many codes due to coding the majority of the dataset, even though the data might seem irrelevant in case of finding unexpected patterns. In the later phases, we managed to decrease the

amount of codes significantly. Throughout this phase and later phases, we began writing notes about our thoughts, reflections, and patterns we saw, which was used to get a deeper understanding of our data and helped us in the iterative stage of the analysis process.

After the coding phase we moved on to the next phase, in where we would be searching for different themes. This part of the process and following phases was a part of an iterative process where we would be spending time reviewing the data and themes, while going back and forth between the different phases (Braun and Clarke, 2006). While searching for themes, as we had thought, we found many overlapping and similar codes, which were categorised in better defined codes. This reduced the number of codes from 175 codes to 98 codes.

We had found the first initial themes through trying to find patterns via inductive analysis of our data (Braun and Clarke, 2006). By comparing, analyzing and merging codes we had found the following four initial themes: *Economy, Knowledge, Insourcing* and *Usage of Consultants*. Additionally, as Braun and Clarke (2006) recommends, we used an "miscellaneous theme", where we would put codes that were interesting and could be useful in other revisions. As presented in figure 2, we can see the imbalance of the amount of codes in each theme in where the theme *economy* only has 8 codes.
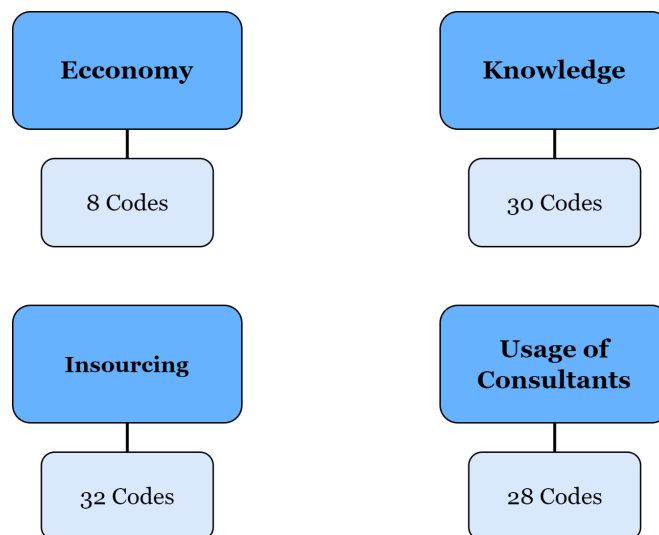

Figure 2: The First Iteration of the Thematic Map

The few codes in *economy* might imply the irrelevancy of the theme, and we considered removing it. However, Bell et al. (2019) states that having an unpopular

theme, which is not mentioned repeatedly, does not necessarily mean that it should not be a theme. Bell et al. further explains that the content of the theme is what matters and not the number of times it has been repeated. Therefore, we were much more aware of the actual content and what the informants were saying than how many times the themes were referenced. Despite that fact, we decided to remove it as a theme and redefine it as a sub-theme.

With our better understanding of the data we revised our themes and also created sub-themes. In figure 3 we present an overview of the revised iteration. We found the themes: *Usage of Consultants* and *Insourcing of IT-personnel*, with the former having three sub-themes and the latter having five sub-themes. As mentioned before, we redefined *economy* as a sub-theme and created other fitting sub-themes. The sub-themes helped immensely in getting an easier overview of all of the data and we were quite satisfied with how well it described the data.
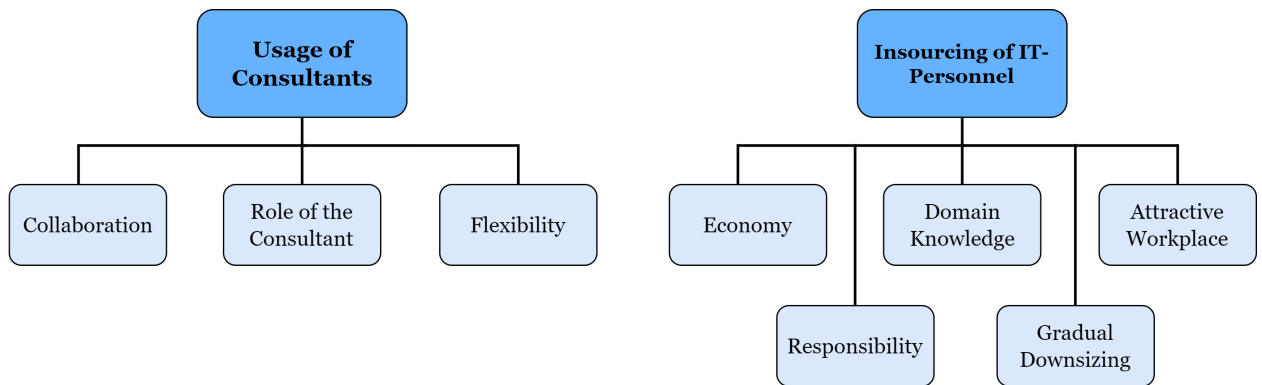
Figure 3: Revised Iteration of the Thematic Map

On the other hand, after we had discussed and reflected on the quality of the themes, we realized that we were not satisfied with the top-level themes. A common pitfall in thematic analysis is having themes that are predetermined before the actual analysis of the data (Braun and Clarke, 2006). Even though the themes fit the data fairly well and distinct from one another, the themes were not describing our desired phenomenon, but rather a reflection of our research questions. Braun and Clarke (2006) explains that the thematic analysis should help the reader understand the narrative being presented. However, this current iteration of themes was not doing this. Furthermore, when trying to define *Insourcing of IT-Personnel*, the theme was too large and the data it described was too diverse.

Using these reflections, we repeated the previous steps again and formed new themes that described our data and the phenomena better. In figure 4, the new themes are

presented in a thematic map. The new themes being: *Insourcing & Outsourcing*, *Environment* and *Knowledge* along with eight sub-themes. We split, moved, merged and redefined themes and sub-themes. For example, the *Responsibility* sub-theme got redefined as *Ownership* and got moved to the new theme *Environment*. This iteration would be our final one, as we were satisfied with how well the themes represented the data.
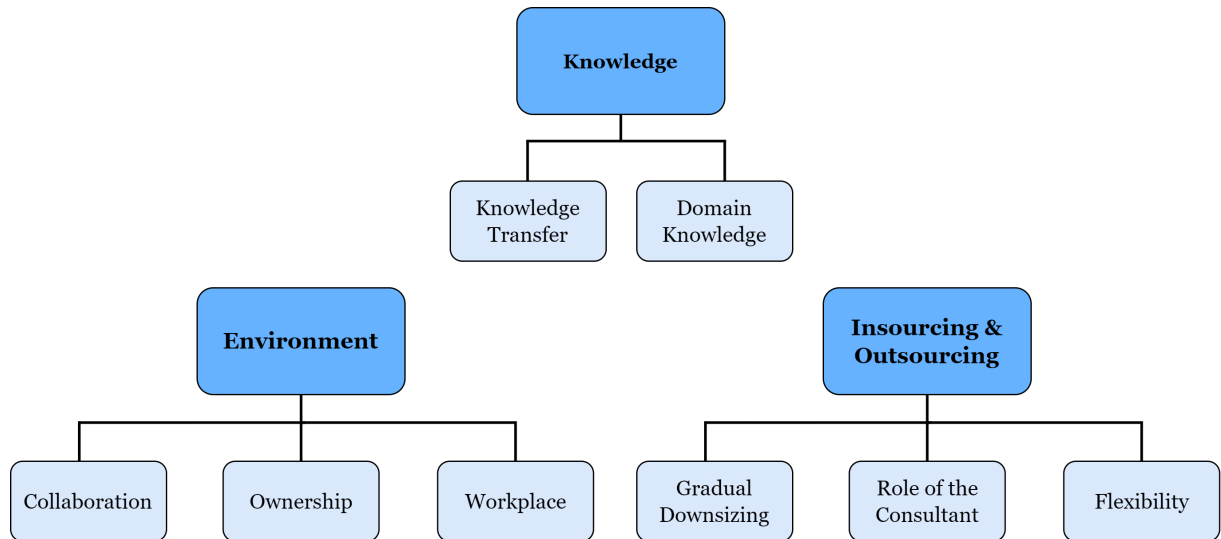
Figure 4: Final Iteration of the Thematic Map

3.5 Reliability, Validity & Generalisability

According to Tjora (2021) reliability, validity, and generalisability are three criteria one can use when determining the quality of a research project. By assessing these criteria we can reflect upon how well the study was executed, how reliable the data and findings are, and whether the findings can be generalized in other contexts. In the following section we will discuss the quality of the thesis in the context of these three criteria.

3.5.1 Reliability

Reliability addresses how trustworthy the results of a research project are. One must reflect on if there are different factors that can affect the results and if one could come to same results by repeating the project (Johannessen et al., 2020; Tjora, 2021). In a qualitative study, there will always be some form of interpretation, as the

researcher will interpret the data and consequently have an effect on the reliability of the results (Bell et al., 2019). Furthermore, when using semi-structured interviews, the researcher is in direct contact with the informant and therefore the context is inconsistent and can directly impact the data gathered (Johannessen et al., 2020). Both of these factors make it difficult or even impossible to replicate the exact results.

Therefore, in our interviews we made sure to be open to different answers and not seek predetermined answers, thus we could minimize our biases when gathering data. Additionally, we were aware that we should use follow-up questions to confirm and receive more in-depth answers, instead of using them to confirm are biases. On the other hand, since we alternated on who conducted the interview, the reliability of the project could have been negatively affected. In retrospect, by alternating roles, we had more inconsistent interviews. This was not noticed until after the interviews were finished.

Contextual factors also come into play and can affect the reliability of the project (Tjora, 2021). All seven of the interviews were done digitally via Microsoft Teams due to distance. One could argue that holding them digitally can negatively affect reliability as it is not as ideal and as natural as holding them physically. On the other hand, one could argue, that having digital meetings is much more normal in this digital workspace, and therefore natural. Nevertheless, we still tried to make the informant as comfortable as possible throughout the interview by engaging in small talk and showing a positive body language with our webcams. Woods (2009) sate the importance of viewing other people while speaking. The less you know someone, the more important seeing them react to you becomes. It makes you more comfortable and helps the conversation along. Therefore, it was important for us to show ourselves during the interview, by having our webcams on.

Tjora (2021) states that to ensure reliability it is imperative to be transparent, thus the reader can get insight in the process and decisions that were taken during the project. We have therefore chosen to be transparent by giving context to the reader in section 3.1.1. The case description presents an objective perspective of the firm and the factors influencing it, such as the smaller budget. Furthermore, throughout the methodology chapter (3), we have documented the process and used academic reasoning in our choices to give the reader insight. Additionally, we have presented how we gathered our informants and documented the interview process. By presenting these steps holistically, and being transparent with the reader, we

attempt to improve the reliability of the results.

To be even more transparent, we have chosen to present extracts from the data when presenting our findings in the chapter 4. By doing so, the reader can build a familiarity with the data. Furthermore, we also use extracts to support our claims and findings. However, giving context to the extracts is also important to ensure that the intentions of the informants are not misrepresented, and we have therefore chosen to do so in the next chapter. Lastly, by presenting the informant ID with the extracts, the reader can get an idea of which parts of the data is used (Tjora, 2021). It is important to note that the group has translated the extracts from Norwegian into English, and thus might affected the reliability.

Our analysis of the data can also affect the reliability of the project (Johannessen et al., 2020). Due to the analysis, being an interpretive process, where we interpret the data to find themes, ending up with the same themes as us is unlikely. We have therefore analysed the data several times to ensure that the themes were not found at random.

3.5.2 Validity

Validity addresses how well the findings relate to the intent of the project and if the proposed research questions are answered (Tjora, 2021). To assess our validity, we must review the sources we have utilized to compile our results. In our research project, we have mainly used primary sources for data collection, which means that our sources are close to the phenomenon we are interested in. Those we interviewed held managerial positions and had explicitly expressed their familiarity with the insourcing strategy and therefore were the most familiar with the phenomenon. On the other hand, as a manager at the institution helped us to pick informants, we could have possibly missed out on other relevant informants that was outside the manager's scope. However, over all we experienced the informants as helpful, valuable and comfortable answering our questions.

Even though the managers were valuable informants for this research project, one could argue that other informants could possibly help answer our research questions. For example, we could have conducted interviews with with IT-consultants themselves and their experience working public institutions. Another possibility could have been conducting interviews with the new employees and ask about their

experience. This topic is explored in the future research part of the conclusion.

3.5.3   Generalisability

Generalisability addresses how well the findings of the research project can be applied to other phenomena and contexts (Tjora, 2021). The phenomenon we studied was the effects of insourcing in a public institution. According to Johannessen et al. (2020) to generalize research projects to other similar phenomena, several criteria need to be met. One of them being that the sample size needs to be representative of the entire population. Due to our data and context being limited to the specific case institution, generalising the findings to other public institutions can be difficult. Considering we only have one intuition as our sample size, one could argue that our sample size is too small.

On the other hand, as we were only studying the IT-department of a public institution, one could argue that the study can be generalized to other IT-departments in public institutions. Due to the national budget cuts for consultancy usage not only affecting our case institution, but also other public institutions (Aftenposten.no, 2020), the other institutions are in similar scenarios. Even though those institutions can have different functions for the country, one could argue that the IT-departments are comparable. Therefore, one could argue that our case can be generalised to describe other public institutions going through the same effects of insourcing.

The goal of qualitative studies is to study the phenomena in-depth, where the study necessarily does not need generalised to be useful (Tjora, 2021). Even though the research project might not be directly applicable to other contexts, our research project can help understanding and give pointers in similar contexts. Generalizing from a particular context to a broader context is called *analytical generalization* (Polit and Beck, 2010). As we have done a qualitative study and conducted interviews, we have gone in-depth in our phenomenon. Therefore, our research project contributes to existing knowledge regarding our phenomenon of *public IT-insourcing* and can be a useful perspective in future research.

3.6 Ethical considerations

According to Bell et al. (2019), there are four main areas that are important when discussing ethical considerations. These four areas are: the participants' consent, the violation of privacy, danger to the participants and fraud. In this section we discuss these areas with regard to our research project.

To start ensuring that we were following proper procedure, we sent an application to Sikt at the early phase of the research project. This application to Sikt, ensures that we gather, analyse, and published are done so in an ethical, safe, and legal manner. Unfortunately, we ran into a problem as the first application got rejected. There were a few minor oversights we had missed and had to fix, to then re-apply. The first oversight was the minimum age of our applications. Sikt's representative had told us that we had forgotten to set a lower age limit. Nevertheless, this was an easy fix. The second oversight was asking informants to name coworkers that could be relevant in interview, the snowball-method (Bell et al., 2019). The problem here was deemed to be names getting recorded without consent, as it could be a violation of privacy. Using the snowball-method through e-mail correspondence instead solved the issue, and we could remove it from the application.

We ensure the participant's consent and protect their privacy by using a consent form and an information letter (See Appendix B in section 7.2). Before starting each interview, the participant received an information letter and a consent form, which they had to hand-in before the start. These documents included the participant's rights, what would happen to their data, the right to withdraw, and how we would anonymize them. Furthermore, when we started each video call, we went through the information letter and the participant's rights to ensure they were correctly informed. To protect their privacy, we anonymized them and processed according to the guidelines from Sikt.

When discussing the topic of danger to the participants, both their danger to their careers and physical danger needs to be taken into consideration (Bell et al., 2019). In our research project, the interviews were conducted digitally. Therefore, the participants were in their office and thus safe from any physical dangers. Additionally, by anonymizing their personal data and the case-firm, the danger to their career is reduced.

The last area of concern is fraud. In a research project context, fraud occurs when a

researcher misrepresents their work and deceives the reader (Bell et al., 2019). We have therefore attempted to present the research project holistically and truthfully. However, doing this ideally is an impossible task (Bell et al., 2019; Johannessen et al., 2020), as we have interpreted, analysed, and reduced the data. In the chapter 4, we often use "(...)" to take out irrelevant words, thus the reader can focus on the important information from the extract. However, one could argue that some context is lost, and data could be misrepresented. Therefore, we tried to not leave important context out, by reading the parts before and after the extracts carefully.

4 Results

In this chapter we will present the results of our data-collection that we consider relevant in answering our research questions. To reiterate, our research questions are:

- How insourcing IT-personnel in positions previously held by IT-consultants in a public institution helps it strengthen and maintain knowledge?

  - How a public institution have used IT-consultants earlier compared to how it uses them now?
  - Why a public institution are insourcing IT-consultants and what are the ramifications on its knowledge base?

These results will be presented primarily as larger chunks of direct quotes, in order to best represent the information given by the informants. As we mentioned before, the interviews were held in Norwegian and the quotes used in the chapter has therefore been translated into English, while trying to best keep the original intent. The chapter is split into three different sections, which corresponds to the three themes we have found during our thematic analysis. The three themes being: *Insourcing & Outsourcing*, *Environment* and *Knowledge*. We will use the findings in *Insourcing & Outsourcing* to answer sub-research question 1 and use *Environment* and *Knowledge* to answer sub-research question 2.

4.1 Insourcing & Outsourcing

Here we will be presenting our findings regarding both themes of sourcing. *Insourcing & Outsourcing* while in some cases opposite, are related issues, and the data findings suggest that it is the balance between them that the institution is striving for, as such they will be presented together here.

After having conducted our interviews, we have gained an understanding that both insourcing and outsourcing is important to the institution and that they offer different benefits that should be weighted depending on the specific need. Insourcing is the current direction of the IT-division, with a strong focus on recruiting and

training internal personnel, so that they are equipped with the institutions core competences.

> *We still use consultants for developing and developing-related positions, those I just mentioned: developing, testing, team-leading, design and architecture. We still use them there, in addition to our own.*
> *(...) We may have had a use of 50-95% consultants earlier, and now we wish for a different balance between them. We have always and will always continue to use the open market, and will always use consultants. It is not meaningful for us to have everyone internal, but we need to have more (internals) than we have had historically. The last 2-3 years we have had a comprehensive recruiting-process, in order to equalize this out a bit. -I.5*

> *(...) We will continue to use consultants, however we will have more people internally employed. The hope is to build up core competences our self, and then maybe go out into the consultant-market and hire inn extra competences. -I.7*

To iterate, there will be more internal employees and they will be trained to take over core areas where consultants have been used. The main takeaway about consultants is that consultants have been and continue to be useful for the institution. However, the identified problem is the overuse of consultants in the past, especially amongst developers. Measures are now being taken by the institution in order to get a better balance between more internals covering core competences and drifting the day-to-day, and external with specializations and supplementary short time use.

4.1.1 Flexibility

A key finding arose when prompted for advantages of consultants, most of the informants then mentioned their flexibility. By which the meant the institution's contract agreements with the consulting firms letting them quickly lease consultants with the desired abilities, for a quick influx of any needed competences.

> *(...) But it is easier to just go to the (consultancy) firms and ask for a specialist, because then you can get one inn in 2 or 3 weeks, while if you were to recruit someone with comparable competences, it would take 4, 5, 6 months before you have them in-house. So there is a short path to leasing if the goal is to start quickly. So that is another advantage with leasing, right? The fact that you get much quicker access to knowledge, much quicker than if you are to recruit from scratch.* -I.5

Consultants offer some advantages that normal employees in public institutions cannot, namely the potential to quickly scale-up potential the workload on short notice. In addition, the institute can start the process of hiring consultants quicker, since the contract agreements are easier to get compared to the bureaucracy of getting a green-light for a new position internally. Mentioned at the same time as ease of up-scaling, another side of the same coin is that consultants also are flexible to down-scale.

> *(...) There is also the flexibility with them, that is maybe the greatest advantage with hiring consultants. And on the other side, when you no longer have need of their services, then you can terminate the contract, and then they are shortly out the door.* -I.3

The consultants are often hired on short contracts, that gets renewed when they are needed. So, when the institution no longer has need for the individual consultant, they may terminate the contract. Even when keeping the same amount of total consultants, they can quickly adjust the composition of consultants to fit their needs at the time.

> *(...) To summarize, I would say there are advantages and disadvantages with hiring consultants, for sure more advantages than disadvantages, since you get the flexibility and you get what you need, when you need it.* -I.3

4.1.2 Role of the Consultant

A particular part of what we learned from the interviews is that it is important to specify what the role of the consultant is, and what it is not. In addition to downsizing the total number of consultants, the informants told the group that

the institution intended to more clearly define which roles they wanted for the consultants.

One of the specified roles of the consultants were as specialists. Were consultants with knowledge on a narrow or specialized field is used. Either because it is hard to find qualified personnel on the field, or it is a field the institution does not need covered most of the time. It would cost more to keep someone with such specialised knowledge employed at all times, rather than just hire them as consultants when necessary.

> *(...) Where one does not have the required knowledge in-house, then we have to lease it. In the long term, I imagine this is how we will use consultants, to hire in expertise. As it isn't certain that one manages to have every type of niche expertise a firm need (in-house) at all times.* -I.2

At time of the interviews the institution was already in the process of insourcing more positions for IT-personnel. As such, they had already begun thinking about the role of the consultant and what positions they wanted them to fill. As informant 3 mentioned, expertise is valuable and costly, and thus more niche expertise outside the core competences of the institution is more practical to hire in as consultants. Adding another layer of flexibility to the consultants.

> *(...) Then there is often the fact that you hire expertise because it isn't competence we have internally, given that there is a short-time need for the given expertise, and it isn't feasible for us to hire them internal then, because it is a narrow field, and you only need to to preform a few specific tasks.* -I.3

Then there is the subject of what the role of the consultant should not be. The main emerging theme form the interviews were knowledge and how it relates to the institution, that also holds true for most parts of consultant use. While most developers, should be internal, they would still also have need for consultants working as developers. A role they were adamant on making sure they had internally in the future were team leaders.

A role we know consider to be a core role, is the team leader and managers, like in the development teams. Because it is kind of a leading course-directing position, that should be familiar with our areas of competence, as well as needing to have technology-knowledge, right? We have used a lot of consultants in these positions before, however we are now working to build up that type of competence internally. -I.1

Having internal team leaders, helps keep a common thread throughout the institutions projects as it allows for consistency. Someone who knows the ins and out of the division, the greater goals of the organization, and understands that there are moving parts in other teams that need to intertwine to create a complete product. Some of the informants told us their sub-divisions did not have consultants in these positions, and the rest said they were insourcing to ensure that these position could be filled with internal employees in the future.

4.1.3 Gradual Downsizing

While the institution has a stated goal of adjusting the amount of internal personnel compared to consultants, insourcing was still an ongoing process when the group interviewed them, roughly three years into the process. This longevity was part of the design. The institution spent time getting new positions approved, finding qualified personnel, and interviewing them. In the meantime, consultants held down the fort.

(...) So we bring in, and we have used the market for almost everything related to development for a very long time. But now, that's why this task is here, and we are in the process of bringing it back home, gradually taking more responsibility for this ourselves, and having our own employees in the roles we previously hired externally for. Not completely, but more than before. -I.5

*We are on a journey in the **Name of the Institution**, where we are moving from having a significant imbalance between external and internal capacity to achieving a more balanced situation. While we wait, we use consultants. -I.1*

Part of insourcing is that it takes a long time to get the right people in-house, and even once you do have them, you cannot expect them to be familiar with the

institution's particular systems. The solution the institution found, was to gradually replace the consultants on core projects. Some of the informants, like informant 3 pointed out that this could be used to bridge the gap when building up competence internally. Downsizing the total use of consultants in multiple steps after a round of hiring, so that the institution is not left without competence during the process.

> (...) The thought there is that as the project starts to roll and has good momentum, you can one by one replace each of the external consultants with internal employees to pretty much ensure that we then gradually get more and more of that competence and absorb it internally so that we are also left with it afterwards. Because much of the purpose here of having internal staff is that we want the competence we need to have over time in the institution. -I.3

Informant 4 mentions that part of doing gradual downsizing is oversight. Knowing how many consultants are working, and with what tasks. After which, the managers can go on specific tasks, evaluate them and plan how internal personnel can overtake the task. After a task has been insourced, the corresponding post in the budget will be reduced, and the institution gets one step closer to the new smaller budget.

> We already have an overview of where we hire consultants today, which teams, which tasks, and so on. Then we see that we have many consultants here. There are five developers working with this task. We believe it would be more efficient to have internal staff. Let's recruit five developers. Once we have recruited the five, the budget post for that task will then be reduced, so there will be no opportunity to hire external ones. And then we will add the internal staff as well. -I.4

The institution also uses this gradual downsizing method for new projects they have yet to hire for. Informant 6 mentions that if they need to start a new project, but have not yet got the internal capacity, they can hire an entire team of consultants. While the consultants get started on the project, the institution starts hiring new developers and puts them on the same project. And as the project continues, more and more of the team will be internal. This way they can start up project earlier, even if they are not done recruiting.

> *(...) No, this has been a platform team under development. To speed things up, we hired an entire team from a consulting firm. But at the same time as we brought them in to accelerate the platform and development, we also put out job advertisements to hire for the team. And that has started to take effect now. There are now several employees who will take over the roles from the consultants. So that is one way of using consultants: during the development phase, we had external help, but now we are building up that competence internally. -I.6*

4.2 Environment

In this section we will be looking into the *Environment* of the institution, and how it facilitates change in the knowledge base. The theme is split into the following three smaller sub-themes: *Collaboration*, *Ownership* and *Workplace*.

4.2.1 Collaboration

There is a close collaboration between the internal personnel and the hired consultants. Most informants mention the close cooperation and integrated teams they work in. Informant 1 also mentions that this is what the institution desires.

> *I think it's mostly a good dialogue. We work in an integrated team, where internal and external people work together. -I.4*

> *There is a desire for close cooperation. After all, we work a lot with flexibility and flexible methodology, agile and autonomous teams, so that's it. There is of course an ambition and a desire that there should be close cooperation here. -I.1*

The collaboration is very close, and thus when working in a team, one might forget who belongs where. Informant 5 mentions that when you are focused in a task, it does not matter who your employer is, and the only real difference is who the paycheck comes from. Informant 3 further states that it is visibly difficult to see who the consultants are beside their ID-card, meaning they are integrated and work alongside everyone else.

> *You forget a little where you belong when you are down deep in a task and have to solve a project or in the middle of development, then you forget a little where you belong and that you really just want to solve the task. So, who you get your paycheck from isn't that important, maybe?* -I.5

> *I think it is very difficult to walk around our premises and then say that, this is a consultant or this is an internal employee. Because they work with exactly the same tasks. And yes, the only way you can show it on the access card is that there is a slight difference, but otherwise it should be the same.* -I.3

Even though the consulting firms are technically a form of supplier, the managers of the institute can also see them as partners. Informant 3 states that consultants do want to sell themselves, thus the consulting firm earns more money. Nevertheless, the consultants still feel like partners. Informant 3 further explains that due to their common goals in building products and developing knowledge, the consultants act like partners. Even though, the consultants have a separate goal of selling more hours, they still have a few common goals in improving their knowledge base and developing products.

> *(...) Their entire business model is to sell as many consultants as possible, as many hours as possible. That's how they make money (...) But still, I experience a great degree of understanding as a customer, (...) I think they act to a large extent as partners more than suppliers, and by that I mean that we have the same goal, that they also want us to build expertise and gain more experience in the area. It's not just that they want to deliver something, and then they are left with all the power because they have the knowledge.* -I.3

4.2.2 Ownership

Part of the reason why internal personnel was wanted in larger quantities, especially as developers, were their sense of ownership over the product. Ownership is referred to as the sense of responsibly for the product. For example, making sure that the product works, fits the institution, and plays along with other products.

Informant 1 does specify that they do not think consultants are not motivated or dedicated, however the sense of loyalty and longevity is stronger with the internal

employees. The mentality that "I work here, we own the product" helps give internals the feeling that they are responsible. It is also important for the sense of longevity, this need to work not only know, but be usable in the future.

> *(...) Also, there's something about internal employees as well. They sort of have a different sense of ownership over what they're working on. And while we find that many consultants care about what they produce and are focused on quality. But perhaps its a bit stronger for someone who is internal, who thinks: "I work (for the institution). They are my employer, and what I'm actually producing here; its ours." So, you get that sense of ownership, which is important. -I.1*

Having been there to make the product make the internal personnel more able to work on it after launch, maintaining and improving the product. Developing something yourself gives great insight into the inner workings and build up domain knowledge needed to work on it. Outsourcing can lead to poor solutions, just as it is possible internally. However, if you receive a black-box product at the end of a consultant contract, it will take a lot more time and resources to do any maintenance or improving the product, compared to a product made by the people who have to fix it.

> *(...) Yes, but then you also know that programming a solution is one thing, but then it needs to be operated, run, maintained, and further developed over a longer period. So if you make some poor choices, it is much better to have an internal team of people who own it, instead of just outsourcing everything and still end up owning the poorly designed (solutions). So there are many advantages trading in the consultants for employees, right? At least the aspect of ownership is important because maybe you save more in the long run by having it in-house. -I.7*

Internal personnel also have extra responsibility regarding processes. Informant 3 states that personnel make sure that the procedures and processes are met to their standards.

Ownership is not only about responsibility, it is also about the ability to influence what the goal should look like. To be part of the internal discussion-making, and coordinate with other teams on how the systems should work in unison. Informant 4, who themselves used to be a consultant for the institution, talks about enjoying working for them, but also wanting to have more input, and the ability to steer the

direction. The ex-consultant gains control of the products when they were hired by the institution, and as mentioned in 4.1.2, should be kept to internal employees. Internal employees gaining that sense of ownership and the ability to influence the products is an advantage of insourcing and positively impacts the institution's knowledge base.

> *We include internal personnel (in projects) to ensure that things are done in accordance with the **Name of the Institute**'s procedures and processes.* -I.3

> *Yes, and I liked my tasks. I knew I would be allowed to continue with the same things I did when I was a consultant. I would have the opportunity to participate in more internal discussions. Discussions that set the direction for our division. Which projects should we start? How should we use our money? As a consultant, I was told that now the **Name of the Institution** is going to focus on this, and you can do that in the project. It was an exciting task, but I would have liked to be more involved in the process. Both deciding what can be initiated, but also to see if the project we are carrying out actually has an effect. So, as to be involved in the whole process, you know.* -I.4 (former consultant at the institution)

On the other hand, the institute does not have any sense of ownership, or responsibility over the consultants. Informant 5 states that the institute is not responsible for the consultant's career as they are not direct employees. This is an important difference between internal employees and external consultants.

> *(...) There is little administration for us, right? You do not have any staff meetings (with the consultants). You have no follow-up and professional development conversations. That is the responsibility of the consulting firms. They're just supposed to show up to work and then go home, right? Whereas with your own employees, you have a responsibility for well-being and employees for development, competence development, you have a responsibility for the entire employee relationship. And it is of course more demanding than it is to just hire in a consultant and have no ties at all, so it is beneficial.* -I.5

4.2.3   Workplace

As the institution builds their internal IT-workforce, the workplace and subsequently the knowledge base also changes. Informant 3 notes that internal employees are

receiving "cooler" tasks. Instead of getting normal and boring tasks, the employee gets more exciting tasks. As opposed to before, when consultants often got the more exciting tasks, informant 3 notes. This leads to better well-being and professional growth for the employee. By more giving the employees more exciting tasks, the institute strengthens their knowledge base, as they develop their IT-personnel and have a higher chance of keeping them.

> *(...) While necessary maintenance tasks is left for them (internal personnel), but we have changed things a bit lately and want to use internal staff for the coolest tasks. Where we have the prerequisites and expertise to ensure that internal resources thrive and want to be in* **Name of the Institution** *for a longer period of time, and you see that you have development and progression then in your job at and in the road service.* -I.3

Those who apply for jobs in the public sector want to say longer. Informant 3 states that they have a lower turnover rate than the private firms. They continue to explain that those who want jobs at the in the institution often want a more long-term and stable career.

> *I have been told and given the impression that those who work in* **the Name of the Institution** *and are employed by* **the Name of the Institution** *have been here for a long time. I think we have that without knowing any exact figures, so I think we have a lower turnover than (...) companies in the private sector. It is probably like that in the public sector. Those who apply for jobs in the public sector probably also have, I think have a greater degree of thoughts about wanting to be there for a longer period of time.* -I.3

Due to the uncertain times in the private sector, the public institution is a much more attractive workplace. Informant 6 states that the private sector is quite hectic right now, and by comparison the private is much more stable and safer. Informant 2 further enlightens this topic, by stating how many applicants have grown from two years ago to last year. Two years ago, there were around 10-20 applicants, compared to last year's 300 applicants. The institution had many great candidates and thus ended up hiring more than initially intended. Informants 2 theorizes that it was caused by the decline in the private sector. Being an attractive workplace, can give the institution many options when choosing candidates, which subsequently can improve their knowledge base.

I think there is a small anecdote to the effect that if you are hired in the public sector, it is a little more stable, since it is a public enterprise versus a private consultancy. (...) It is a somewhat hectic period in the private sector. So I think that's what makes it more attractive to be with **the Name of the Institution***. (...) stability is the big thing.* -I.6

We had job advertisements out for developer positions here in just over the summer of last year, and we probably received over 300 applications, and we had an ambition to actually hire somewhere between 5 and 8 people. But then we chose to expand it quite a bit when we saw that there were so many well-qualified candidates. The same type of position one year in before; we got very few there. I think there were maybe between 10 and 20 applications, so something has happened where a shift towards applying and seeking security when you see that there is a period of decline. -I.2

4.3 Knowledge

In this section we will be looking at the theme: knowledge. From our data analysis, we have categorized the theme into the two smaller sub-themes, *Domain knowledge* and *Knowledge Transfer*.

4.3.1 Domain Knowledge

The use of consultants can negatively impact the institution's knowledge base. According to informant 1, by using consultants, the institution builds the consultant's knowledge and can use it internally. However, due to the fact that the consultant is a temporary resource, the institute then loses that domain knowledge when consultant leaves.

Informant 1 expresses how unfortunate it is as the institution invests into building up that domain knowledge and is then suddenly lost. Additionally, they state how unfortunate losing knowledge in the IT-department is especially, where domain knowledge is important. Informant 6 expresses something similar and mentions that they do not get keep the people, who they have indirectly trained through projects. Using consultants leads to building up knowledge that the institution will eventually lose, and this negatively affects the institution's knowledge base. Informant 1

punctuates the fact the domain knowledge is a large part of the work in the IT-department, and so losing a year plus worth of it, in addition to the hours spent by others to train the consultant, has a negative impact on the knowledge base.

> *The disadvantage is that you get externals, you build domain knowledge on that person. And that is knowledge that we would like to keep internally because a consultant is in a time-slotted space, right? So they may only be here for a year, and then they have to go out, and they have spent a year building up domain knowledge that disappears. Compared to if you have it internally, then you have access to that expertise for a longer period of time. And it's really a lot about domain knowledge in our work. After all, it is a significant investment to build up the domain knowledge which means it is unfortunate when it disappears, and that is just how it is.* -I.1

> *There is a lot of learning in projects, so when we work the project members get trained. In a way, we train juniors and consultants for the consulting houses, who we are not allowed to keep afterwards. That's a downside.* -I.6

The institution's skills and knowledge are not the only things that are affected when the consultants leave, but the continuity also gets affected. Informant 3 mentions that having the knowledge temporarily leads to the continuity getting broken. They further explain that having consultants is not a good long-term solution, as the companies can only use knowledge temporarily.

> *(...) Of course they also leave with their expertise and their wise heads. So using consultants is not a good solution for **The Name of the Institute** or other companies over time, because we do not own the expertise and knowledge. We only have it on loan during the period the consultant is on assignment with us, and then it disappears again, so continuity is one thing that gets broken.* -I.3

One of the ways to not break continuity is by having internal resources involved in projects. Therefore, those internal IT-personnel can help bridge the gap of knowledge, when the consultants eventually leave, and carry on the continuity.

> *(...) But it is true that we have internal resources involved in the project, both developers and architects, and there are several reasons for that. One reason is continuity, that after the project is finished, we want to be left with the competence internally to a large extent. -I.3*

As we have seen, there are many dangers to the institution's knowledge base by using consultants. Informant 1 explicitly states, that using consultants can be seen as risky and leaves the institution vulnerable. According to informant 1, a measure that the institution has taken is having a balance between insourcing and outsourcing as a way of protecting themselves and keeping the built-up knowledge internal. This measure is new as the informant says that they have a long journey ahead.

> *But now we want to have it more balanced, precisely because if we have it like we used to when we only had external personnel, we would become vulnerable, right? Because then a lot of competence is built-up externally that we need internally, so we are now on a very important journey ahead there then. -I.1*

Another way of minimizing risk is to prioritise projects and knowledge that are important for the public institution. Informant 1 states that the senior management can choose which projects and initiatives that are important and focus their internal personnel on those areas. By doing prioritising important projects, the institution can keep critical domain knowledge for future use and minimize the risk.

> *(...) A new important strategic initiative for **the Name of the Institution** can appear, and people say, OK we need to start this initiative. We need people on this project then (...) in that case, we might move internal staff over to that project, because it is such an important initiative for **The Name of the Institute** that we want to have (...) internal expertise and capacity in that area. But that will be priorities made in relation to the management signals we receive from senior management. -I.1*

4.3.2 Knowledge Transfer

As previously stated, including internal personnel in projects is an important part of mitigating the negative effects of consultant use. Additionally, by including internal

resources, internal personnel can also absorb the consultant's tacit knowledge and can transfer knowledge from the external consultant to the internal employee.

Informant 5 states that internal personnel can also work with consultants within the same project, and by being led by a specialized consultant, such as a generative AI specialist. By doing so the internal employee eventually become a specialist themselves within a few years. The institution uses the consultants as a way of keeping their knowledge base update-to-date with the newest technology, but also to ensure employee growth.

> *Generative AI, for example, which something we are working on. We have started some projects now together with a consulting firm, but we also have our own developers included in the projects. Then they will learn a lot through that project, ergo, they can build up their expertise over time. Such as in a year or two, then they may be specialists themselves, meaning that they build by learning to build, by being involved in projects such as in a way maybe led by other specialists. So it is an important part of the education program we have in the institution that our people should be also be involved in what is happening, in new technology and in things that are somewhat cutting edge.* -I.5

As the consultants are gradually downsized, and new internal hires replaces them, the new replacement and the experienced consultant have an overlapping period where both members are in the team at the same time. Informant 4 states that consultants are actively used when training a new junior staff member. Additionally, they state that there are one to two months, where they work together and collaborate.

> *(...) If we have hired replacements for consultants, perhaps younger people with little work experience, no experience with the institution, who need more time for training, then we have used consultants a little more actively to support the training. And actually a slight overlapping period so that the consultant who is going to be cut out, works at the same time with the new employee for two months, where they can collaborate a bit. (...)* I.4

Informant 7 also mentions this overlapping period and further explains that the consultant and the replacement do code reviews together and generally work closely. However, informant 7 also expresses how a month is too short of a time span for

transferring all the necessary skills, competence, and knowledge, which are required to be a suitable replacement for the consultant. Despite the fact that the month of overlap is helpful for knowledge transfer between the replacement and the consultant, the period is too short and could ideally be longer.

> *It has been a prerequisite that there should be a month of overlap when exchanging consultants. We have seen that it's too short. When it comes to junior, it's absolutely impossible. It often takes a couple of years for someone to be up to par with someone who has been developer for a long time. So we try to get as much time as possible for competence transfer (...). Then it they will more likely sit together for as long as possible in order to transfer expertise. For example they do code reviews, so that they go through everything. -I.7*

When the replacements are getting trained, they often through "learning-by-doing". Informant 7 states that when developing IT-systems, that most of learning is actually done by working on tasks that enable growth. However, they also state that when a new hire is learning through working and collaborating with a consultant, the efficiency of the team slows down.

> *(...) In modern system development, you learn things by doing them. By taking on the tasks that enable you to get the skills you need, and get into things that way. So, in a way, the speed will slow down. The production speed per hour decreases when you do an on-boarding like this. -I.7*

Informant 5 explicitly states that working together with a senior is one of the most effective ways of learning. The informant mentions that the majority of the knowledge is attained through "learning-by-doing" and is even more effective when a junior is paired up with a senior consultant. Even though the senior teaches the junior, the junior can also contribute by using their own personal perspectives.

> *(...) What we definitely learn the most from is the experience of working with the subject (...) 80% of what you learn should be from "doing", also known as "learning-by-doing". It is very true that if you work with someone who is better than you, and someone with a little more seniority than you, then we learn an incredible amount by facilitating it. So that we can bring in a junior together with a senior and pair them up, then it is extremely valuable for juniors, but also for seniors. The junior often brings up views and thoughts that can arise when they don't have a plan or when they are stuck. -I.5*

On the other hand, the consultant is not only learning from the junior's perspective, but also strengthening their own competence. Informant 3 states that the consulting firms also want their employees to build knowledge while working on customer projects. Therefore, both the replacement and the consultant gain knowledge from working together.

> *(...) And the consulting houses are very aware of that they want to use us and other customers as an arena to build new competence and further develop the competence they already have. So they are very concerned with that knowledge, and that their people that are hired at **The Name of the Institute**can learn something and come out strengthened from the period you are at a customer. -I.3*

Although the institute uses the consulting firms to train their employees, there are occasional exceptions. Informant 3 states that if the consultant hoards knowledge, the consultant will eventually get replaced. This emphasizes how crucial it is for the institute to use consultants as a way of teaching IT-personnel.

> *If one (of the consultant) chooses to keep their own competence and don't teach their customers (...), then they will be replaced. Then we as a customer do not want to continue working with that consulting firm because it is of course extremely important to learn subjects we are betting on and absorb the knowledge and competence the consultants has. -I.3*

In addition to using consultants, the institution also uses conventional methods to train the new IT-personnel. According to informant 7, when training a newly employed person, the intuition uses an on-boarding programme in combination with external consultants. The institution's goal is to get the new employee up to speed

and contribute to the team and learn to work independently. Additionally, informant 3 states that the internal IT-personnel can also attend presentations and conferences as an option for learning. However, they emphasise that these options are only meant to be supplementary, as the main way of transferring knowledge is though working on the job.

> *(...) We want to get our new employees out into the team as soon as possible together with the consultants and make a competence transfer. In addition, we run an on-boarding programme with courses on our systems. Very hands on training course simply on how our internal systems work. And then there will of course be different domains that the different developers will enter and work in (...) with an agile team where they become part of the team. And actually start quite quickly with doing their own tasks. -I.7*

> *And then, of course, we can use our suppliers to hold conferences and presentations for us as a supplement. But that is really just icing on the cake for the most important learning that takes place in the projects and in day-to-day work. -I.3*

5   Discussion

In this chapter, we will interpret our most important empirical findings from the results and contextualize them in relevant literature. Furthermore, we will attempt to use our results to expand upon existing literature. The chapter is divided into three separate sections. In the first section we will be discussing why and who chooses the sourcing strategy and what are the effects of insourcing. In the second section, we discuss how the institution uses consultants to train up internal IT-personnel. In the last section, we will discuss how the institution currently utilizes consultants to minimize the risk of potential negative effects on their knowledge base.

5.1   The Stakeholders chooses the Sourcing Strategy

The economic aspect of the case is considered the main reasoning for the insourcing in the public institution. When we asked the informants why they started to insource roles that were previously held by IT-consultants, the general consensus among them was that the lower budget from state is making them prioritize insourcing, thus the institution can cut costs.

As with most large public institutions, there are multiple stakeholders that have a vested interest in the case-firm. For the outcome of insourcing to be identifiable, stakeholders within the project are: the government, leadership, and managers. The government is the owner of the case-firm and the one that sets directives for it to follow. Alongside the leadership, they set the goals of the institution. They are aware of the fact that less taxes in the future will mean a smaller budget for the case-firm, so they need to enact changes. The leadership is also aware of the effect overuse of consultants has on the institution's knowledge base.

From the government's perspective, the institution needs to continue functioning with lower costs. Their primary goal is to cut cost, as is typical of executives according to Hirschheim and Lacity (2000). The case-firms leadership needs to balance the reality of a smaller budget for the institution, while still keeping their knowledge base intact. To this end, the managers ended up choosing a new sourcing strategy. The chosen method being insourcing; more specifically insouricng of long term IT-positions. Hirschheim and Lacity (2000) mention that IT-insourcing can be

both effective and cost saving, depending on the stakeholders. From the interviews, the managers and the leadership seem positive towards the results of insourcing so far and thus our study supports the findings of Hirschheim and Lacity (2000), as the insourcing does help in reducing costs, and that "success" relies on overlapping views of stakeholders.

Looking back at Hirschheim and Lacity (2000)'s four archetypes, the case-firm can be compared to both #1 and #4. There is an external pressure of a lower budget that functions as a motivator to reduce cost. The leadership then empowers the managers to cut cost as they see fit, similar to what is described in #1. A point from Hirschheim and Lacity (2000) was that some of the cost cutting from outsourcing was not unique and could be replicated with effective management of insourcing. It is the insourcing alternative that the institution has chosen as their method of cost reduction.

Consultants can be a great cost saving tool when they are used as auxiliaries, focusing on work outside that of the internal personnel (Power, 2006). However, when they are used to cover the same work as internals, over long periods of time, they lose a lot of their unique value. The informants were clear a consultant costs more than an internal employee. This is partially because they pay a cut to the consulting firm. For the individual replacement, the informants mentioned matching or even exceeding the salary for junior developers, and only behind on senior salaries. The institution can offer competitive salaries for the individual while still cutting cost from consultants. As mentioned by informant 4 in 4.1.3, when they insource a task, they cut the corresponding cost in the budget. This way the managers can track their progress with insourcing and the money saved in the budget. The budget can then be trakced by the leadership, letting them confirm the success of the insourcing. Our study seems to concur with Hirschheim and Lacity (2000)'s #1 scenario, in where managers can reduce cost through internal sourcing, if enabled by higher ups.

Price was the facilitating reason for the shift, and the institution's focus towards insourcing. The goal was to improve efficiency by maintaining knowledge and empowering internal personnel, as the informants told the group. With consultants, one lacks the longevity of an internal employee, the fact that the case-firm gets to keep them and their knowledge for a long time. The consultants still bring valuable knowledge to the institution in these positions, as they are still highly skilled workers. However, one of the questions in our interview guide regarded the uniqueness of

the knowledge consultants possess. The informants replied that consultants, while highly knowledgeable, didn't possess any unique general knowledge compered to any other senior developer that applied to the case-firm's new positions. Consultants who had been working for the institution did possess built up domain knowledge, that is considered valuable and rare for the case-firm. This tacit knowledge takes time to build up with any new worker regardless of how they are sourced (Kucharska and Erickson, 2023).

With a large number of insourced personnel they can know start to teach them this tacit domain knowledge, making them equal to the long term consultants. And as mentioned by Hirschheim and Lacity (2000), having internal employees can give unique strengths, such as better control and ownership over the products. These benefits hearken back to IEBP, which enables, innovation, coordination, and shared knowledge between different units (Qu et al., 2010). Here the literature aligns with the wishes of the institution, to have more control of production, along with ownership in case something goes amiss. As mentioned by informant 7, mishaps do happen, and having someone who knows the product and feels responsible to step up and fix it, is important for the risk mitigation of the IT division. In addition, more internal personnel on a project provides increased coordination between teams within the IT division and the institution as a whole. These advantages from insourcing increase the cost-effectiveness of the money spent, something the informants note. While the group did not speak to the leadership of the institution directly, the managers among the informants told us the institution as a whole approved of the effects insourcing was having. This brings us back to Hirschheim and Lacity (2000)'s archetype #4, where executive management acknowledges the insourcing as a success, because of the unique effects it brings. Our findings seem to correspond with Hirschheim and Lacity (2000).

According to Qu et al. (2010), IBEP should also lead to more knowledge shared between individuals and divisions. However, this is not supported in our findings. From our interviews we have found no indication that insourcing leads to better knowledge transfer within the firm. Consultants were actively used for it if they possessed desirable knowledge, but as stated above by the informants, the consultant's knowledge was not unique. The consultants and the internal personnel are integrated in the same teams, work side by side according to informant 1 and informant 4. So given that tacit knowledge is shared in "learning-by-doing" scenarios (Kucharska and Erickson, 2023), and they are equal in terms of knowledge, there

is no indication of increased knowledge sharing in either sourcing scenario. This might have been different, if the outsourced workers were separate or even worked remotely, as it seems like the close working proximity was pivotal for smooth knowledge sharing. But as it stands, we cannot conclude on the knowledge sharing aspect of IEBP, as the group found no indications during our interviews suggesting one way or another.

5.2 Consultants Are Used to Train Their Own Replacements

Over the last three years the institution has been hiring a lot of internal developers. During the same period, they have also reduced the total amount of consultants they had long term. A part of the current insourcing process is to exchange the position one-by-one, as in one internal in and one consultant out.

The consultants are currently being used to train their internal replacements, in where the consultant transfers their knowledge to the replacement. Much of the domain knowledge and specialised knowledge relevant to the institution matches the description of tacit knowledge from Polanyi (1962), due to the knowledge being mainly skills and experiences in the IT-department. In this section we will be discussing how the institute transfers tacit knowledge from consultants to internal IT-personnel and comparing their methods to the methods described in the literature.

From our results, we have found that consultants are being used to train their own replacements by working together in an overlap period. As we mentioned before, the institution is gradually replacing consultants with internal IT-personnel, and one of ways of ensuring for a smooth transition is through collaboration. According to the informants, the new hires will work side-by-side with the external consultants and learn by working on the same project. Informant 5 mentions that having a senior work with a junior is an effective method of training the junior employee. This method of transferring tacit knowledge is also described as an effective method, where a mentor teaches an apprentice (Dampney et al., 2002; Hizar Md Khuzaimah and Hassan, 2012; Kucharska and Erickson, 2023). In our study, one can argue that we have found that the mentor-apprentice relationships exist between the consultant and the replacement. Furthermore, the institution is actively using methods similar

to those described in literature to transfer knowledge.

Despite the fact that most of the knowledge transfer is from consultant to internal replacement, the replacement can also transfer knowledge to the consultant by offering different perspectives. Informant 5 mentions that the replacement can still be useful by using their own personal views and experiences, even though they lack experience. This is a good representation of tacit knowledge, as Reed and DeFillippi (1990) and Dampney et al. (2002) states that tacit knowledge is personal and differs from one person to another. Due to the personal and subjective nature tacit knowledge has, the replacement can transfer knowledge to the consultant, as the the replacement can have experiences that the consultant does not have. Our results support the personal nature of tacit knowledge.

Furthermore, according to Dampney et al. (2002), transferring tacit knowledge properly takes time and effort due to its inherently sticky nature. This explains the overlap period that informant 4 and informant 7 mentions, where both the replacement and consultant work together on projects to learn. Ideally though, as informant 7 states, the institution would prefer a bigger overlap period to ensure complete knowledge transfer, which would explain how important time really is to transfer tacit knowledge. The informants themselves admits that a 3-6 month period would be a more appropriate timespan but would not be possible due to the high costs of having a longer overlap period. Our study seems to support former literature on the topic that tacit knowledge transfer takes time, as the institution values the overlap period, but would prefer a longer period to ensure complete transfer.

Having more time to transfer knowledge would help the replacement internalize the knowledge and lower the risk of losing said knowledge. Informant 5 mentioned that they could use a specialized consultant to train their own IT-personnel, and hopefully have their own specialist in a few years. When the informant refers to having a specialist of their own, one could argue that the specialist is an employee with internalized tacit knowledge, as the internalization of knowledge means having a deep enough understanding of a topic to be able to share (Wipawayangkool and Teng, 2016). Due to the internal employee internalizing the knowledge, they end up with more self-confidence and is much more likely to share that knowledge (Kucharska and Erickson, 2023). One could argue, that by having internalized knowledge, the employee is able to share their knowledge internally, and further strengthens the institute's knowledge base.

On the other hand, having a consultant, who has already internalized the knowledge, is a great way of acquiring knowledge. As previously noted, when a person has internalized knowledge, the person will informally and voluntarily share the knowledge (Wipawayangkool and Teng, 2016). One could argue that the consultants already have the knowledge internalized, and due to the consultants working closely with their replacements, the consultant will share their knowledge to the replacement. Coincidentally, informant 3 note that if the consultants hoard their knowledge, the institution will most likely stop working with them. We find that having a consultant that has internalized knowledge, will share their knowledge voluntarily to the institution.

When the replacements are getting training from the consultants, we could place their methods in either "learning-by-doing" or "learning-by-interacting", which are categories from Kucharska and Erickson (2023). Informant 5 actually refers to "learning-by-doing" explicitly and states that most of the learning is done through working on projects and tasks together with the consultant. Although informant 4 claims that they are conscious about how they actively use consultants for training and might therefore fall into "learning-by-interaction", the description of the method still falls in line within "learning-by-doing". The reason being that the method still is informal and transfers the knowledge passively, such it is described in (Asher and Popper, 2021). One could therefore argue that the institution is using "learning-by-doing" methods to transfer tacit knowledge.

Although most of the learning is done practically in "learning-by-doing" contexts, informant 7 does mention something akin to "learning-by-interaction". The informant mentions that the consultant and the replacement do code reviews together. Since, code reviews typically are a formal session in where the participants actively reflect on their work, one could argue that the code reviews can be considered "learning-by-interaction". Therefore, the institute also utilises "learning-by-interaction".

In addition to training the replacement with the help of consultants, the institute also uses more traditional methods. Informant 7 and informant 3 states that they also have on-boarding programmes, along with presentations and conferences that employees can attend. These methods could be seen as methods of attaining explicit knowledge (Dampney et al., 2002). Although, informant 7 emphasises that most of the learning is done through actual work. This coincides with the research done by Bryans (2017), where the author states that 80% of learning is done through on the job experience. Although some of the learning is done through traditional

methods, we find that most of the learning in the IT division is done on the job, which supports previous literature regarding tacit knowledge transfer.

5.3 Keeping Key Knowledge within The Institution to Mitigate Risk

Throughout section 2.1, the literature has emphasized how important knowledge is for acquiring a sustainable competitive advantage (Barney, 1991; Curado and Bontis, 2006; Hitt et al., 2001; Asher and Popper, 2021; Kucharska and Erickson, 2023). Nevertheless, as informant 5 states, the institute still chooses to continue outsourcing and use consultants for their clear benefits. As the institute will continue their use of consultants, they therefore choose to prioritize different key areas that are important to the institute.

Before explaining how institutes prioritize consultants, we first have to argue why they potentially pose a risk to their knowledge base. Since the consultants are human resources that are "semi-permanently" linked to the firm, consultants can be seen as a resource (Wernerfelt, 1984). According to Barney (1991), we can analyse resources by using the VRIN-model. According to informant 2 and 3, the consultants have niche and specialized knowledge, and thus the consultant is arguably fulfilling the valuable and rare requirements of VRIN. Although the knowledge the consultants possess does in fact fulfil the inimitability and non-substitutability requirement (Curado and Bontis, 2006; Pereira and Bamel, 2021), one could argue that the consultants themselves do not fulfil the requirements, as any other organization can hire them. From our study, we can therefore assume that consultants themselves do not lead to a sustainable competitive advantage, but the knowledge they possess do.

Nevertheless, when an organization utilizes a consultant, the knowledge they provide is only temporary. Informant 1 and informant 6 state how unfortunate it is to lose knowledge of the consultants after training them up, as they finish their contract. Adler (2002) mentions how important it is to retain knowledge inside the firm, as knowledge is an important strategic resource that leads to a sustainable competitive advantage. Adler (2002) further explains that losing that knowledge, wastes the resources spent in training the employee. Informant 3 understands the drawback of having large amounts of knowledge on loan and states that it is not a sustainable

solution. One could argue that when using consultants, one not only loses their knowledge, but also wastes resources in training them up. Our results show that using consultants, who is filled with knowledge, leads to tremendous loss of time and resources, and thus supports the literature.

By choosing to insource roles previously held by consultants, the institute can minimize that loss of resources. But as we noted, the institute is continuing their use of consultants. And therefore, they have to prioritize where to use consultants to minimize risks. There are multiple ways that the institute does this.

The institute prioritizes certain key roles, which must be filled by internal personnel. As stated by informant 1, team leaders and managers should be internal personnel and not consultants, as internal personnel in these positions ensures that the continuity of knowledge is kept intact. Informant 3 states that by having internal personnel participate in projects with consultants, they can also keep the continuity intact. Curado and Bontis (2006) and Dampney et al. (2002) states that knowledge accumulates over time, and that accumulation of knowledge is crucial for the survival, and adaptability of the firm. Thus, one can argue that by avoiding external managers and team leaders, continuity is kept intact and knowledge can accumulate over time. Our study shows that internal leaders help in the adaptability, and survival of the firm.

Furthermore, internal personnel help follow routines and improves the knowledge base. Informant 3 states that having internal personnel ensures that the projects follow the institution's procedures. Curado and Bontis (2006) emphasizes that having the right routines enable organizational learning, and thus improves knowledge within the organization. Therefore, one can argue that prioritizing key roles, such as team leaders and managers, improves the knowledge base by ensuring procedures and routines are followed. By having internal personnel, the institute can also adapt to unforeseen challenges better (Teece et al., 1997). Our results expand on the literature and shows that to ensure to right routines are met, key roles must be filled by internal personnel and not external consultants.

Another way the institute prioritizes the use of consultant is assigning them to less critical projects. Informant 1 states that senior management chooses which projects are crucial for the institution and that they prioritize internal personnel for that project. The informant further explains that by doing this, they can protect and keep the most critical knowledge inside the institute. A fundamental idea of KBV

is having heterogeneous knowledge (Curado and Bontis, 2006; Pereira and Bamel, 2021). One could argue that by having internal personnel in crucial projects, the institute ensures that their most critical knowledge stays heterogeneous, as it stays within the institute. According to Curado and Bontis (2006), when knowledge is heterogeneous, the firm can utilize it to have a sustainable competitive advantage and survivability. Thus, our study shows that prioritising internal personnel in crucial projects, leads to a heterogeneous knowledge and therefore sustainable competitive advantage and survivability.

5.4 Main Findings of the Discussion

By contextualizing our results with the literature, we have managed to better understand the results, while also expanding and supporting the literature regarding: tacit knowledge, KBV and sourcing strategies.

For their sourcing strategy we have found that the institution has invested heavily in insourcing, as a way to cut costs. Our findings seem to be in accordance with that both point #1 and #4 of Hirschheim and Lacity (2000)'s literature. When managers were enabled, they could source internally in order to cut costs, and that stakeholders acknowledged that the unique advantages of insourcing proved cost-effective. The advantages seemed to align with Qu et al. (2010)'s IEBP, with increased control and communication. However, we cannot confirm that knowledge sharing was superior with insourcing compared to outscoring, as the consultants and internal personnel worked integrated in the same teams.

We have also explored how consultants share their knowledge to their replacement. The institute has both parties in an overlap period, where the consultant takes on a mentor role and the replacement takes on a apprentice role. These roles align with literature regarding tacit knowledge transfer (Dampney et al., 2002; Hizar Md Khuzaimah and Hassan, 2012; Kucharska and Erickson, 2023). Additionally, we find that the replacement can also transfer knowledge to the consultant, which is explained by the subjective nature of tacit knowledge (Reed and DeFillippi, 1990; Dampney et al., 2002). We also find that internalization of knowledge is important and leads to more knowledge sharing. Lastly, we confirm that "learning-by-doing" is an effective method for knowledge transfer and is mostly used in the institution.

Due to continuation of outsourcing, the institute prioritises their use in different

areas to protect key knowledge. We find that consultants do not fulfil the requirements of the VRIN-model, as a result of other organizations being able to hire them. Furthermore, we find that the use of consultants also leads to the loss of knowledge and resources invested in them, which is consistent with findings from Adler (2002). We have found that to combat this effect, key knowledge should be internal, and the institute should prioritize internal personnel for crucial projects and roles such as team leaders and managers. These findings extend the literature, as we highlight the importance of using internal personnel to keep knowledge within the institution to improve the competitive advantage and survivability of the institution.

6   Conclusion

In this thesis we have explored the topic of insourcing in public institutions in the context of our main research question: "How insourcing IT-personnel in positions previously held by IT-consultants in a public institution helps it strengthen and maintain knowledge?". With this research question and sub-questions, we have managed to explore the topic regarding insourcing in a public institution. In this last section, we will be summarizing our research project and its findings in the context of our research question. Furthermore, we discuss both theoretical implications and propose new ideas for future research. Lastly, we present practical implications and relevant recommendations based on our findings.

6.1   Summary

The main reason for this gradual downsizing is economic. The institute receives a lower budget and must therefore be more cost-effective with their capital. One of the ways to be more cost-effective is to insource and cut the use of consultants. Consultants are more expensive than internal employees and is why the institute chooses to insource. Nevertheless, it is important to note that the institute will not be completely cutting consultants, but rather just reducing their usage. The institute will continue using consultants due to their flexibility and specialized knowledge.

Due to having less consultants, the institute changes how they use them. The institute uses consultants differently now compared to how they used them in the past. For example, the institution is now prioritizing non-managerial roles for the consultant. Furthermore, internal personnel are now prioritized for the most crucial projects. Thus, the most crucial knowledge is kept safe within the institute. Additionally, the institute actively use the consultants as mentors for their new IT-personnel, and therefore the institute will minimize the loss of knowledge.

Overall, our research shows that insourcing has a positive effect on the institute's knowledge base. The reduction of consultants is a slow process, in where they will slowly phase out the consultants one-by-one in a team to ensure a smooth transition period and keeping the knowledge base intact. Insourcing leads to a bigger internal department, and thus more of the knowledge the institute uses is kept inside. Furthermore, consultants break continuity in a project by leaving, and

therefore having more internal personnel will protect continuity and lets knowledge accumulate overtime. By having more internal knowledge, the institute enables organizational learning and can adapt to future challenges better.

6.2 Theoretical Implications

During this project, we have collected qualitative data about our topic, and compared our results to relevant literature. In our discussion, we have pointed out similarities to results and existing literature. These similarities support and expand upon the literature by employing them in our context. The context regarding insourcing in a Norwegian public institution is relatively unknown, and with our project we were able to shed light on the topic using the literature.

For literature regarding sourcing our study brings a case where both insourcing and outsourcing are necessary to optimally run the institution. Through the lens of Power (2006) and Dibbern et al. (2004)'s studies we found use for consultants as auxiliaries. They are useful for both the expertise they provide and the ability to quickly start projects before the necessary internal personnel is in place. Our study found that insourcing was an effective method of cutting cost when managers were enabled to do so. It also gave advantages in better control and communication as described by Hirschheim and Lacity (2000) and Qu et al. (2010). With this, our project brings a case study of how to manage in- and outsourcing in public institutions to the theory. Our project reinforces existing sourcing theory by presenting a case study of how to manage in- and outsourcing in public institutions.

Our project support theories about tacit knowledge and methods regarding knowledge acquisition. Our results support that most of the knowledge is done by "learning-by-doing" (Kucharska and Erickson, 2023). Furthermore, our findings are align with the mentor-apprentice relationship found in tacit knowledge transfer (Dampney et al., 2002; Hizar Md Khuzaimah and Hassan, 2012). Additionally, our study supports the importance of time when transferring knowledge (Dampney et al., 2002; Asher and Popper, 2021; Kucharska and Erickson, 2023), but also expands upon the literature by highlighting the overlap period that the institute uses.

Our study also contributes to KBV, by contextualizing them in an insourcing setting and presenting practical decisions taken by management to protect their knowledge base. From our study we have expanded upon RBV, by concluding that consultants

do not fulfil into the VRIN-model (Barney, 1991). The study also supports the theory stating the importance of retaining knowledge, as using consultants lead to a loss of knowledge, continuity, and resources. Moreover, we also expand the literature by finding methods of prioritizing consultants to ensure that their knowledge stays heterogeneous.

6.3   Future Research

Our study only uses one singular case-firm, and there are many other public institutions that are affected by the budget cuts. Therefore, future research can look into other public institutions. These different public institutions differentiate in budget-size (Aftenposten.no, 2020), and thus researchers can compare effects and methods to our study; potentially expanding or contradicting our findings.

A weakness of our study is that we assume insourcing has lower costs based on qualitative data from managers. As costs are of numerical nature, an interesting idea could be a study using quantitative methods. A future study can take a quantitative approach, and for example use cost analysis to confirm if insourcing is in actuality cheaper than outsourcing. Furthermore, the study could also use a large sample size, to generalize it's findings.

As our case-firm has recently started insourcing and is currently still gradually downsizing the use of consultants, it could be interesting to study the public institution in the future, after they are finished with the downsizing process. An informant also mentioned that other public institutes have come further in the process. Thus, researchers could also choose a public institution that has come further in the process. This study can contribute by showing longer-term effects of the sourcing strategy.

6.4   Practical Implications

The study will mainly have practical implications for Norwegian public institutions but could also be found useful in other firms in the process of insourcing. Our study has enlightened insourcing and its effects on the knowledge base, and thus we give recommendations and implications for relevant managers.

Insourcing is a viable strategy for organizations that must cut costs. Our study shows that insourcing can not only cut costs, but also can strengthen the knowledge base of an organization. Nevertheless, the process of insourcing is a timely investment, as managers should have an overlapping period, where the internal replacements and external consultants work together in a team to ensure complete knowledge transfer and internalization.

Our study highlights the importance of keeping crucial knowledge within the firm. Managers should prioritize key projects and roles to ensure that the organization has continuity and thus can accumulate knowledge. Furthermore, managers should have teams comprising of both internal personnel and consultants, as both parties learn and grow from each other, thus improving the organizational learning and their knowledge base.

Lastly, as our study finds clear advantages of insourcing, it is imperative to note that in our results we have also found clear advantages of outsourcing. Consultants still have specialized knowledge and flexibility, that internal personnel cannot rival. It is therefore important for managers to think critically about the factors and context surrounding them before choosing to insource roles that were previously held by consultants.

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7 Appendix

7.1 A: Interview Guide

Pre-Interview

Formålet med prosjektet er å bedre forstå hvorfor og hvordan tidligere konsulenter som har samarbeidet med en bedrift blir ansatt internt. Vi tror dette fenomenet skjer ofte ifølge anekdoter vi har hørt fra alumni fra NTNU og er et fenomen som ikke er så særlig undersøkt i Norge.

Vi har definert en foreløpig problemstilling: «Hvordan kan insourcing av IT-konsulenter hjelpe offentlige bedrifter beholde og styrke sin kompetanse»

Oppgaven er i samarbeid med veilederen vår, Xinlu Qiu, førsteamanuensis ved NTNU Trondheim, Handelshøgskolen.

- *Vi forventer å bruke 30-60 minutter på intervjuet, men kan være lengre!*
- *Forklar hvordan vi fant frem til informanten.*
- *Vi ønsker å intervjue omtrent 10 personer.*

Hvordan benytter vi oss av denne informasjonen?

Informasjonen vi samler inn vil bli benyttet til å skrive en masteroppgave om problemstillingen vår.

Gå gjennom informasjonsskriv med informant

- *Du vil ikke bli å indentifisere deg direkte eller indirekte i oppgaven eller ved andre publikasjoner.*
- *Lydopptak og data lagers kun på nettverk fra NTNU, eller i NTNU sin Office 365 (Microsoft Teams)*
- *Du kan når som helst trekke dere, både fra selve intervjuet eller etter intervjuet.*
- *Gå gjennom samtykkeskjema, og nevn de viktigste punktene.*

Jeg skal lede/holde intervjuet og stille de fleste spørsmålene, imens X skal komme innspill og oppfølgingsspørsmål hvor han føler for det.

Informer om at lydopptaket (eventuelt) starter nå

Intervjuguide (Antall spørsmål? Mellom 15 og 20)

NB: Dette er en semi-strukturert så vi må være litt åpent til å gå andre retninger i intervjuet

Introduksjon

1. Om informanten og organisasjonen
   a. Hva slags stilling har du i denne organisasjonen?
   b. Hva innebærer denne stillingen?
   c. Hva gjør denne organisasjonen?
   d. Hva gjør avdelingen du jobber hos?
2. Oppklaring: Kan du definere hva en konsulent er?

Bruk av konsulenter

3. Ved hvilke fagfelt/områder anser du som særlig gunstig å bruke konsulenter?
4. Kan du fortelle om et prosjekt hvor dere leide inn IT-konsulenter?
   a. Hva brukte dere konsulenter til?
   b. Når ble det bestemt å bruke konsulenter?
   c. Hvorfor bestemte dere for å bruke konsulenter?
5. I hvilken kontekst, er det mer gunstig å ha med en ekstern konsulent enn det er med å ha fast ansatt?
6. Hvordan gikk kommunikasjonen med eksterne konsulenter?

Konsulent vs. Fast ansatt

7. Hva opplever dere som fordeler med hyring av konsulenter?
   a. Utfordringer av hyring av konsulenter
8. Hvilke roller er det, per i dag, IT-konsulenter utfører for Vegvesenet?
   a. Kun midlertidige oppgaver? Eller også langsiktige/permanente?
9. Hvordan opplever du samarbeidet mellom konsulentene og de faste ansatte?

a. Jobber de helt separat, eller tett?

b. På hvilke fagfelt jobber de tett og hvor jobber de separat?

10. Ansetter dere noen gang konsulentene etter deres samarbeid med et prosjekt?

    a. Hvis ja, når og hvorfor?

        i. Hva slags stilling får dem hvis de blir ansatt?

        ii. Hvordan er søknadsprosessen?

    b. Hvorfor ikke

    c. Hvordan opplever dere disse konsulentene?

        i. Hva er det ved disse konsulentene som gjør at dere vurderer de som attraktive for fast ansettelse?

11. Hvordan er kunnskapen konsulenter sitter på annerledes enn den de som ellers søker på it-stillinger har?

    a. Kan denne kunnskapen forankres i bedriften om de ansettes

    b. Hvordan overfører x-konsulentene sin kunnskap og kompetanse til bedriften?

12. Er det andre metoder enn fast ansettelse som gir bedriften tilgang på kunnskapen konsulenten sitter på?

13. Hvordan påvirker tidligere prosjekter med en ekstern konsulent vurderingen om de skal ansettes fast?

    a. Ferdighetene/Kunnskap til personen

    b. Personlige egeneskaper

14. Etter fast ansettelse av tidligere konsulenter, har dere opplevd noen endring i grad av kommunikasjon, kunnskapsflyt, involvering i prosesser, og resultat generelt?

    a. Hvorfor tror du det har verdt en endring?

        i. Typ: Tilhørighet, endring i tidshorisont

Valg av konsulent

15. Hvordan har lovverket endret måten dere har brukt konsulenter? (Arbeidsmiljøloven)

16. Er det noen andre regelasjoner eller krav fra statens side når dere skal velge konsulent?

   a. Hvis ja: Hvilke krav er disse?

   b. Hvis ja: Har disse endret seg? Hvordan har de endret seg?

Avsluttende kommentar

17. Har du noen slutt tanker eller spørsmål til oss? Kanskje noe som er interessant for oss å vite?

18. Tusen takk for at du stilte opp og hjelper oss med masteroppgaven.

7.2 B: Information Letter & Consent Form

Vil du delta i forskningsprosjektet
IT-Insourcing og Kompetanse?

Dette er en masteroppgave for to studenter ved NTNU Handelshøyskole ved linjen Master for ledelse av teknologi

Formålet med prosjektet
Dette er et spørsmål til deg om du vil delta i et forskningsprosjekt hvor formålet er å
- Studere insourcing av IT-arbeidere og hvordan dette kan styrke kompetansen i bedriften

Hvorfor får du spørsmål om å delta?
Du får denne forespørselen fordi
- Vi håper du har evne og kompetanse til å delta i undersøkelsen
- Vi ønsker å komme i kontakt med folk som har innsyn i bedriftens beslutninger rundt insourcing
- Vi har hatt kontakt med din kollega Ørjan Mathis Tvedt og henvist til deg

Hvem er ansvarlig for forskningsprosjektet?
NTNU er ansvarlig for personopplysningene som behandles i prosjektet.

Det er frivillig å delta
Det er frivillig å delta i prosjektet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Hva innebærer det for deg å delta?
Om du velger å delta i denne undersøkelsen:
- Tar vi kontakt via mail om oppsette av en intervju
- Intervjuet vil foregå digitalt over Microsoft Teams (andre kanaler kan benyttes om ønsket)
- Intervjuet er antatt å ta mellom 30min – 1t
- Intervjuet vil bli tatt opp, lyden vil brukes for å transkribere intervjuet
- Vi kommer til å be om navn, kontaktinformasjon og stillingstittel, navnet vil anonymiseres i oppgaven, kontaktinformasjon vil ikke bli oppgitt
- Du kan lese og få tilgang til oppgaven om det ønskes.

Kort om personvern
Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler personopplysningene konfidensielt og i samsvar med personvernregelverket. Du kan lese mer om personvern på neste side.

Med vennlig hilsen
Xinlu Qiu   Nilo Andrade Caguicla og Johan Olav Nordahl

(Veileder)   (Studenter)

Utdypende om personvern – hvordan vi oppbevarer og bruker dine opplysninger
- Studentene og veiledere vil ha tilgang til innsamlet data
- Navnet og kontaktopplysningene dine erstattes med en kode som lagres på egen navneliste adskilt fra øvrige data
- Informant vil være anonym i oppgaven om den publiseres
- Kun studentene Nilo og Johan vil behandle opptaket av intervjuet, en transkribert og anonymisert versjon vil værevedlagt oppgaven

Hva gir oss rett til å behandle personopplysninger om deg?
Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra NTNU har personverntjenestene ved Sikt – Kunnskapssektorens tjenesteleverandør, vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter
Så lenge du kan identifiseres i datamaterialet, har du rett til:
- å be om innsyn i hvilke opplysninger vi behandler om deg, og få utlevert en kopi av opplysningene,
- å få rettet opplysninger om deg som er feil eller misvisende,
- å få slettet personopplysninger om deg,
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

  Vi vil gi deg en begrunnelse hvis vi mener at du ikke kan identifiseres, eller at rettighetene ikke kan utøves.

Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?
Prosjektet vil etter planen avsluttes 31.08.2024

Opplysningene vil da slettes.

Spørsmål
Hvis du har spørsmål eller vil utøve dine rettigheter, ta kontakt med:
- Veileder: Xinlu Qiu kan nås på email: xinlu.qiu@ntnu.no og tlf.: 73559196
- NTNU's personvernombud: Thomas Ørnulf Helgesen mail: thomas.helgesen@ntnu.no og tlf.: 93079038

Hvis du har spørsmål knyttet til Sikts vurdering av prosjektet, kan du ta kontakt på e-post: personverntjenester@sikt.no, eller på telefon: 73 98 40 40.

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet, Insourcing av kompetanse, og har fått anledning til å stille spørsmål. Jeg samtykker til:

☐ å delta i digitalt intervju med opptak

☐ at mine opplysninger behandles frem til prosjektet er avsluttet

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(Signatur av prosjektdeltaker, dato)