

Introducing a New Practise in Healthcare

- A Case Study of the Introduction of Laparoscopic Colon Surgery in a Norwegian Hospital

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Abstract

New health reforms and an increasing demand for quality and effectiveness have put pressure on the health care sector to offer the latest and best treatments. At the same time, many of these new treatments are so radically different from existing ones that they pose a challenge to the existing social relations and medical practises. Current research has recognized an increasing need for learning and innovation in health care to overcome boundaries impeding the diffusion of innovations. Hence there is a need to identify what challenges that may arise when introducing a new practice into health care.

Consequently, the purpose of this project is to shed light on the following two research questions:

1. What challenges may one face when introducing a new clinical practise in a hospital?
2. To what extent do actors have a common interpretation of the challenges they face when introducing a new practise?

To obtain research material, a case study was conducted at a surgical department in a Norwegian hospital where a new surgical technique, colon laparoscopy, was introduced. The study is based on interviews and observations of the staff.

The research material obtained suggests that introducing a new practise may increase tensions between different professional groups. However, this relates to various aspects, such as the actors' presumptions about the benefit of the practise, the distribution of power and the existing power relations in the organization as well as the management's degree of involvement and interest in the practise. Consequently, this study offers insights into the complex processes involved in introducing a new practise in health care organizations.

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Foreword

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Contents

ABSTRACT	2
FOREWORD	3
CONTENTS	4
1. INTRODUCTION	5
1.1 AIMS OF THE STUDY AND RESEARCH QUESTIONS	11
1.2 READERS' GUIDANCE	11
2. RELATED RESEARCH.....	12
2.1 EXPERTS AND KNOWLEDGE BOUNDARIES	12
2.2 POWER RELATIONS	15
2.3 CHANGE MANAGEMENT AND NEW PRACTICES	18
3. METHODS.....	21
3.1 OVERALL APPROACH AND RATIONALE FOR THE CASE STUDY	21
3.2 SELECTION OF RESEARCH SITE.....	21
3.3 METHODS FOR CONSTRUCTING THE RESEARCH MATERIAL	22
3.4 REFLECTIONS ON MY ROLE IN CONSTRUCTING THE DATA	25
3.5 ANALYSING THE RESEARCH MATERIAL	26
3.6 ETHICAL ISSUES ASSOCIATED WITH IN-DEPTH INTERVIEWING	27
3.7 REFLECTIONS ON GENERALIZABILITY AND LIMITATIONS OF THE STUDY (RELIABILITY & VALIDITY)	29
4. INTRODUCING THE COLON PROJECT	31
4.1 BIRTH OF THE COLON PROJECT	31
4.2 A BETTER WAY TO INTRODUCE A NEW PRACTISE	34
4.3 "TROUBLE IN PARADISE"	36
4.4 LACK OF LEADERSHIP SKILLS?	38
5. DISCUSSION.....	41
5.1 IMPEDING KNOWLEDGE BOUNDARIES	41
5.2 EXISTING POWER RELATIONS	45
5.3 MANAGERIAL CHALLENGES ASSOCIATED WITH CHANGES	49
6. FINAL REMARKS	53
7. REFERENCES	55
8. APPENDIXES.....	59

1. Introduction

In the western society the health care sector is facing growing costs and growing problems with the financing of these costs. At the same time, the production of health care services is not growing accordingly (Kjekshus, 2003: 134). This situation has resulted in a battle against inefficiency and a quest for better ways of organizing hospitals and the health care. As a strategy to contain cost growth and increase efficiency, there is a global trend towards privatisation and market orientation of the health care sector (Lian, 2003:198). This has put great pressure on the quality of care and treatments delivered (Fosse, 2004). Patients have become more educated and aware of their rights and therefore have higher expectations. To meet these demands, numerous reforms have been implemented, such as patient reforms, new health care financing systems and the restructuring of health care organizations (e.g. A-Hus) (SINTEF, in press). The introduction of “free choice of hospital” from 2001 has made it necessary for hospitals to be concerned about how they can increase their competitive advantage (Kjekshus, 2003: 140).

Within medicine, new discoveries are made all the time. During the last years, there have been attempts at implementing new and improved methods to offer better treatments. Treatments based on advanced technology are increasingly introduced into the clinical sphere. Lian (2003:39) mentions that the development of new medical technology must be seen in relation to the increasing demand for health services. In a market-based health care, the introduction of new and better procedures is necessary to meet the demands for efficiency. In this relation, the need for facilitating research and development within medical technology has been acknowledged (Lærum & Stordahl, 1991; Fosse, 2004). There has been a focus on optimizing the conditions for this type of research (Lærum & Stordahl, 1991). Many of these new practices are assumed to lessen the uncertainty associated with traditional clinical practice, and thus make the clinical work more certain and productive (Fosse, 2004).

Still, a number of breakthroughs in science and technology that could drastically improve medical practice fail to be translated into practical use (Robertson et al. 2006: 2-3). Often this is because these breakthroughs cut across the established disciplinary and professional boundaries, or because they do not align well with traditional practices (ibid). It has also

been pointed out that medical innovation is controversial (Sætnan, 1995:14). That is because a new practise not only challenges existing practises but also the interests associated with these and the social relations in the clinic more generally. For innovation to succeed, it seems vital to integrate new knowledge with existing practises and disciplines (Robertson et al. 2006: 2). Restructuring of healthcare, generation of new medical knowledge and the development of new technology has actually led to an increased need for organizational innovation and learning, as well (Mork et al., 2007). This calls for research that focuses on the organizational effects of medical innovation processes.

Studying the introduction of new practises into healthcare may help us understand what challenges that might appear during the process. This thesis is a case study of the transfer of a new surgical procedure – laparoscopic colon surgery¹ – from a Research & Development department in an academic hospital (hospital A) to a smaller, regional hospital (hospital B). This transfer process is referred to as the colon-project². My study aims at shedding light on this particular transfer of knowledge and competence. It may also contribute to a more general impression of how new knowledge and competence is being disseminated in the medical field. Hopefully, this study may help generate new hypothesis about knowledge diffusion and to the applied theory of the implementation of technical innovations.

To obtain the relevant research material, a qualitative approach was applied. A single-case study can provide rich and useful insights to help us understand what challenges that may arise when a new practice is introduced in health care. The case study is based on in-depth interviews, observation and documentary materials. Ideally, one could study the introduction of such a new practise in many hospital departments. A comparative approach allows one to discover similarities and differences in practise, and thus get a better foundation for developing general hypotheses. But for a master project like this one, such a study would become too comprehensive and time-consuming. Therefore, the scope of my study was narrowed down to focus on one case, namely the *colon project*.

¹ Laparoscopic surgery is carried out by inserting scopes (camera, instruments) through smaller incisions, instead of one large incision as in open surgery. Colorectal surgery is usually required due to cancer of the colon.

² The word colon means “tykktarm” in Norwegian. The colon project is collaboration between two hospital departments for implementing colon-laparoscopy in a traditional department in a Norwegian hospital.

It is likely that introducing a new innovative technique may be more challenging than introducing it to a “traditional environment” as it presupposes close cross-disciplinary collaboration. Besides, numerous studies have underscored that changing existing practises can be challenging (Mork et al., 2006; Mork et al., 2007; Carlile, 2002). I will position my study within what has become known as practise-based studies (Gherardi, 2000). This line of research has shown that internal organizational boundaries may impede the distribution of knowledge in an organization (Robertson et al (2006:2). Carlile (2002: 442-4) identifies three different approaches to such boundaries; a *syntactic*, a *semantic* and a *pragmatic* approach. Whilst the syntactic approach emphasizes differences between different kinds of knowledge, a semantic approach takes into account differences in the *meaning* of knowledge – interpretive differences – which make communication difficult (ibid: 444). It is the pragmatic approach which is of most relevance to my project. The pragmatic approach to knowledge boundaries according to Carlile (2002) implies that since the “old” knowledge has been institutionalized in practice, there will be a resistance towards new types of knowledge and practice. Thus Robertson et al. (2006:3) emphasise that professional groups will resist new knowledge because it threatens the existence of their “old” knowledge and the associated practise. New knowledge, associated with a new practise can quickly make an established expert into a novice (Madsen et al, 2000; Shanteau, 1992). Because knowledge is stated to be context-dependent, a former expert will have trouble recognizing “new knowledge” just as if he/she was a novice.

Thus it is assumed that the more difficult it is perceived compared to the old practise, the more strongly its introduction will be opposed. According to Carlile (2002), new knowledge is a critical factor in creating competitive success for an organization. But if it is to perform this function, its associated practise must first become an accepted part of the new work environment. The knowledge has to be transformed into practise. To him, therefore, knowledge can be characterized as both a source of and a barrier to innovation (Carlile, 2002: 442).

I should add that existing power relations can also make it difficult to distribute knowledge across different levels and professions. Scholars agree that power resources can make it easier to get approval of one’s ideas (Weber, 1968; Hatch, 2006). Being in possession of power resources may thus be an important tool in avoiding interference. In this relation, I will make use of Bråten’s (1973) concept of model monopoly. Furthermore, challenges

related to the introduction of a new practise, may be connected to the organizational context as well. Therefore, the managers are responsible for organizing so that they reinforce the adaptation of new processes (Grønhaug et al, 2001). The introduction of a new technique to replace the previous is a change of practice. Unwanted changes can be perceived as a threat to an organization's already established practice (Lewin, 1951). Theory of change management can provide useful tools which can help managers direct the process of change. Applying a qualitative approach, including in-depth interviews when studying the introduction of the colon project, may provide information on this topic.

Laparoscopic CRC surgery: some background

In 1996, a Research & Development department (R&D) was established at a regional hospital in Norway (Fosse, 2004). The centre was cross-disciplinary organised to increase and enhance communication between the different disciplines and specialists. The Centre was not to become dominated by one discipline, as is still normally the case for departments in somatic hospitals. Rather, it was to cut across disciplines. Indeed, this cross-cutting was an important part of the basis for being innovative (Lærum & Stordahl, 1991). For instance, a remarkably 35 percent of the staff has a technological background, which deviates dramatically from the traditional way of organizing a hospital department. The R&D department aims at developing new techniques within image-guided treatments and minimally invasive surgery³ (Fosse et al., 1997). Their aim also involves transferring these techniques to other departments and hospitals (Fosse, 2004).

One promising domain, which the centre is working with, is laparoscopy. Laparoscopy is also known as keyhole surgery. In the literature, "laparoscopy" refers to keyhole procedures carried out in the abdominal area (Fosse, 2004:7-10; Aanestad, 2002:20). Laparoscopic surgery has brought a revolutionizing "gold standard" for certain surgical procedures (Balli et al, 2000:1034). Conventional, open surgery of the colon is highly invasive. It requires a large incision and patients have to undergo a long recovery period (Comprehensive Center for Laparoscopic Surgery, 2005). The laparoscopic method has attracted increasing popularity (Lærum & Stordahl, 1991; Edwin, 2005; Fosse, 2004). It yields better results than

³ "As the term implies, it minimizes the "invasiveness" of the procedure. Instead of a large incision to facilitate the surgeon's direct vision and manipulation of organs, instruments and optics for a video camera are entered through small incisions that may be 5-10 mm wide". (Aanestad, 2002:20).

traditional interventions. These results include less postoperative discomfort for patients and better cosmetics. Also, hospital stays are shortened because of faster recovery time (Edwin, 2005:6). For a hospital, this means better cost containment and effectiveness as well as heightened patient satisfaction. If such an alternative to traditional, more invasive surgery exists, patients will more likely choose it. After the introduction of the right of patients' to freely choose hospital from 2001, offering this treatment as an option would give hospitals a competitive advantage.



Picture 1. *Traditional, open surgery with a large incision and long recovery for the patient. Source: Hargreaves (1996)*

However, on its way towards becoming the preferred method for treating cancer of the colon, the laparoscopic method has encountered several drawbacks. It may lead to port-site-metastases⁴. For some patient groups the method also has been contraindicated (Edwin, 2005; Balli et al. 2000; internal protocol). Besides, throughout history newly developed procedures have usually been met with scepticism and resistance in the professional community. This has been no exempt in Norway as well (Edwin, 2005). The following excerpt depicts these hurdles and how to overcome them, quite clearly:

“Because it involves both resection of part or all of the organ and restoration of gastrointestinal continuity, laparoscopic colectomy is a technically difficult operation. It requires a skilled and interested surgical team for its successful completion. (...). These difficulties have slowed the widespread use of laparoscopic colon surgery” (Stamos & Vargas, 1998: 41).

⁴ Spread of cancer to the site of incisions (ports).



Picture 2. *Laparoscopic surgery, New angle of approach: The surgical team is looking upon a screen to view the procedure. The camera is a scope inserted into the abdomen. Source: R&D department.*

Around the world, the beneficial effects of colon surgery have been well documented and it has been concluded that it is now safe to introduce such a method as day care surgery (Edwin, 2005). As mentioned, the colon project is the transferral of laparoscopic colon surgery from the R&D department to hospital B.

1.1 Aims of the study and research questions

This study aims at contributing to our understanding of the processes that are involved when a new practise is introduced in a hospital setting. More specifically the focus is on how the staff perceives and reacts to the process of introduction. Hence, a single-case study approach was applied where one project that introduced laparoscopic CRC surgery in a Norwegian hospital is examined. More specifically, the following two research questions are addressed;

1. What challenges may one face when introducing a new practise in a hospital?
2. To what extent do actors have a common interpretation of the challenges they face when introducing a new practise?

Based on the research already presented, a reasonable assumption is that the introduction of a new practice, like colon laparoscopy, will face many challenges. To be able to successfully implement innovations, one has to identify what factors that may become obstacles. Furthermore, in order to understand my project it is important to see whether actors have a common understanding of their situation and what they perceive as challenges. By examining to which extent they attribute these challenges to power relations and management issues one can develop an understanding of challenges from actors' point of view.

1.2 Readers' guidance

In the following chapter I outline some related research. In chapter 3, the methods used to obtain the research material (interviews, observation and document analysis) are described. In chapter 4, I will present the research material before my case is discussed against related research in chapter 6. Finally, some concluding remarks are given in chapter 6.

2. Related research

In the following chapter, some related research will be presented. Some relevant studies on *knowledge boundaries and innovation* illustrate why changing a practise can be challenging. I will also briefly present some studies of *power* and *change management* as they shed important light on the difficulties of changing practises.

2.1 Experts and knowledge boundaries

Stephen R. Barley (1986) showed that introducing new technology can alter the organizational and occupational structure of clinical work and thus, complex organizational change processes are the result. The reason may be that much of the technology innovation is coming from outside of the clinical profession, but it might as well be because the group feels threatened by the innovation because it will challenge their role and importance as clinicians (Coiera, 1999; Robertson, 2006). Barley (1986:78) thus suggested the thought that changing the form of production would likely affect the organizational form.

Pragmatic boundaries impeding innovation

Being regarded as an expert depends on the specific contexts and relations that make it possible for them to appear as experts (Madsen et al. 2000). E.g. the clinical organization require for experts in clinical fields. Accordingly, studies of experts will require a study of the social relations in which they appear as experts. A thorough discussion of the term 'expert' is somewhat beyond the scope of this chapter but the term will here refer to one who has gained specific practical/general knowledge through a formal process. The point is that experts possess knowledge that they have gained by extensively internalizing tacit (implicit) and explicit knowledge. This expert knowledge is situated in a specific knowledge *domain* ("domain-specific knowledge") (Madsen et al, 2000; Shanteau, 1992). But when outside this field, their knowledge is no longer situation-specific and the 'expert' will no longer be the one holding expert knowledge (Shanteau, 1992:13). Carlile (2002:442) put forward that knowledge also may represent a barrier to innovation and thus can be characterized as being problematic. Knowledge itself can become a barrier to innovation because it is *localized*, *embedded* and *invested* in practice. These are aspects to knowledge

that makes it difficult to manage (ibid). The following citation by the same author depicts the possible problematic aspects of knowledge:

“This specialization of “knowledge in practice” makes working across functional boundaries and accommodating the knowledge developed in another practice especially difficult” (Carlile, 2002:442).

The reason why a new practice may face resistance is that it will replace the old and as a result, individuals will appear reluctant to change because this process will be costly for them. Robertson et al. (2006:3) further elaborates this fact and assert that actors view the new practice as *competence destroying* of their previous knowledge; they feel threatened by the new practice (ibid; Henderson et al. 1998:28; Henderson, 2006:5-6).

As mentioned earlier, Carlile (2002:443-5) differentiates between three approaches to knowledge boundaries; the syntactic approach to boundaries regards differences in the knowledge itself and the semantic approach emphasizes boundaries that arise because of different meanings attached to knowledge. A pragmatic approach to knowledge boundaries focuses on differences in practice; Individuals invest in their knowledge and their existing practice (Robertson et al. 2006:3; Carlile, 2002:442). Carlile (2002) further suggests that this unwillingness to change will make it difficult to obtain changes in practice and consequently, represents a pragmatic boundary. With this, he proposes that the old and new practices are contradictory; they are nearly mutually exclusive.

Here we observe a clear parallel to what is described as the *expertise-problem* within cognitive psychology⁵ (Madsen, 1999). Because extensive knowledge is gained through internalizing tacit knowledge and through practice, it has also become intrinsically related to practice, as pointed out by Carlile (2000). Madsen (1999:2) refers to this process as *automation* of knowledge; the knowledge is basis for the practice and changing the practice to another will be competence destroying of the previous knowledge, because it will no longer be of use to another practice (Henderson et al. 1998; Henderson, 2006).

Experts and boundaries

⁵ Cognitive psychology is a branch within psychology. The word cognition refers to psychological processes related to information processing, reasoning and decision-making.

A way to explain why knowledge may be found problematic is that by possessing expert knowledge, one is elected/assigned the role of a master. Within cognitive psychology, it has been stated that cognitive differences exist between the reasoning of an expert and a novice (Shanteau, 1992). “An expert's cognitive processes are tailored to the unique characteristics of a particular problem area”, (Shanteau, 1992:13). Anyhow, the pivotal question also raised by other researchers (Madsen, 1999; Madsen et al. 2000:8), is how an expert in one field, who has gained his/her knowledge through a “highly organized process”, can communicate with experts who have also gained their knowledge through the same process, but in an entirely different field. This means that knowledge is acquired through practice and therefore hard to let go. This is also the problem with the expertise developed in one field (Chi et al. 1982).

Research has also highlighted the difference between the knowledge base of experts and novices. Through a long learning process, experts have acquired *mental sets* which deprive them of the ability to think outside their domain, this is referred to as *fixation* by Wiley (1998:718):

“...domain knowledge is easily and possibly automatically activated when experts encounter domain relevant material [...] domain knowledge may act as a mental set and promote fixation” (ibid).

The notion of fixation leads us to the problem of interdisciplinarity, which Robertson et al (2006) already points to. A new practice will be difficult to introduce because it will “out challenge” the already existing skills of actors. An implication of this can be that changing an existing practice to a new will require a change of the mental set as well.

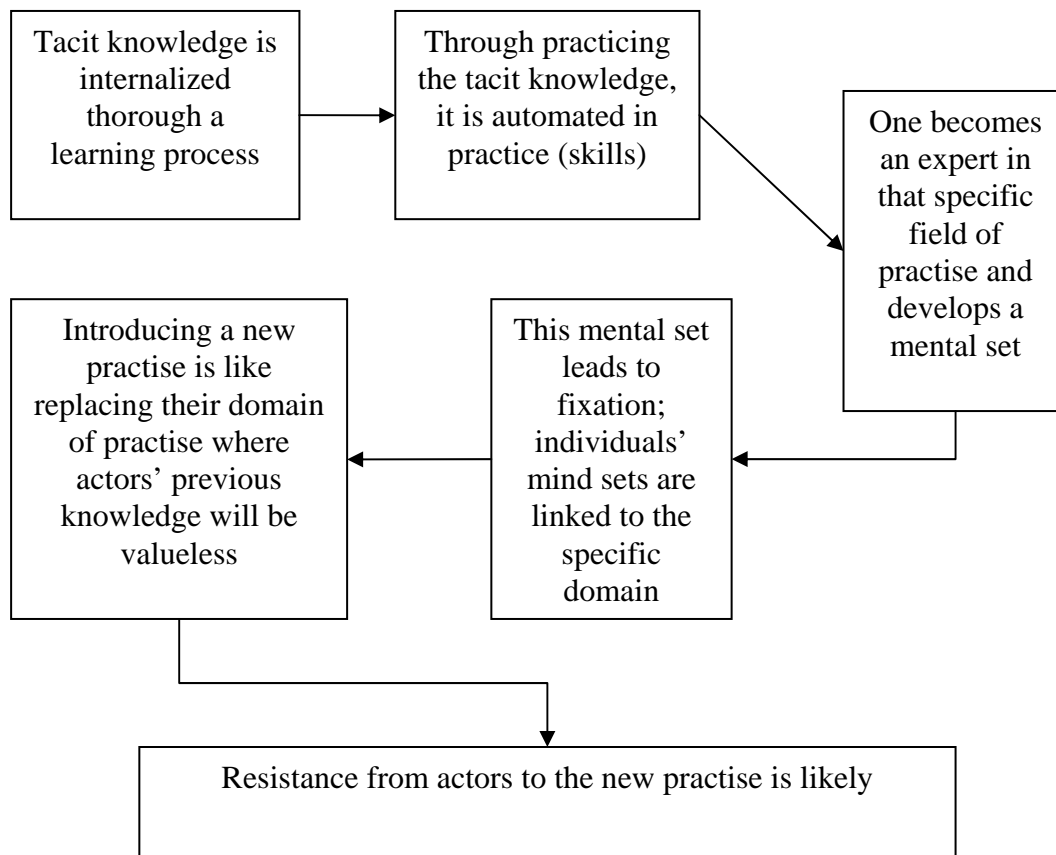


Figure 1

The issues which make knowledge difficult to manage, are related and can be presented in the form of a “reaction chain” as depicted in figure 1. The research presented above shows that knowledge becomes a barrier for innovation because of existing pragmatic boundaries which separate experts in different fields from each other. It seems that *knowledge sharing* becomes more difficult the more one advances in knowledge. A different but related topic when discussing knowledge and knowledge-sharing is the role of power. Power affects how and in which direction knowledge is shared (Hatch, 2006).

2.2 Power relations

Power relations

A wide definition of power entails “an individual’s ability through social relations, to achieve his or her own will against the resistance of others” (Weber, 1968: 211-215). Drawing on Weber’s definition, Robert Dahl’s characterization of power says that “actor A

have power over actor B to the extent that A can make B do something B would not otherwise do” (Hatch, 2006:310) – a coercive type of power. Power can also be associated to a position, resources, or individual characteristics (Scott & Davis, 2007:205) but not necessarily on the expense of others, as this poses a limited negative view on power. Moreover, power also affects what kind of interests in an organization that gains recognition (Hatch, 2006). Power thus affects outcomes (Robertson et al. 2006:4). Another characteristic about power is the individuals’ holding of resources like knowledge etc. Several researchers agree that knowledge is a resource, and with resources comes power, or better – the ability to achieve ones own will (Weber, 1968; Hatch, 2006, Scott & Davis, 2007; Bråten, 1973). Knowledge thereby represents a form of advantage over those who do not have it and thereby find themselves dependent on those holding it (Madsen et al, 2000). This concept is called “model power” (Bråten ,(973), which we will take a closer look at now.

Model power

Professor Stein Bråten (1973) has suggested a *model monopoly paradigm* which addresses the role of knowledge and power resources. Model monopoly is power constituted on the ground of one individuals’ holding of resources (models) which others are dependent upon. Others thereby become subordinates in relation to the individual holding models (ibid; Kanstrup & Christiansen, 2005). Such models are our given information or the cognitive capacity in some field. Some people may have stronger cognitive capacity than others in a one domain (Bråten, 1973:98-100). This can be compared to what Wiley (1998) refers to as mental sets. Bråten (1973) further suggests that some individuals have “strong models”; they have developed rich models in a certain area (like surgical skills). Others are “model weak” who are poor on the relevant knowledge (Kanstrup & Christiansen, 2005: 166).

The model monopoly paradigm assumes that individuals with weak cognitive capacity feel their perspectives are overrun by the perspective of the “model holder”, hence the term monopoly. To sum up: If A is model strong in one specific field, he has control over B who is model weak in that field. Therefore, B will try to acquire the knowledge – or the models – of A. Another presumption of this theory seems to be that B must be attributing these skills and knowledge to A and that is the reason why B appears as captivated by A’s perspective. An individual with a weak model will find himself in a state of powerlessness and come under the power of the monopolist. For the model monopolist, it will be more likely to get

through with his or hers ideas because “model-weak” people will not interfere. This also implies that knowledge will be directed in a top-down fashion; from the model-strong, to the model-weak. To gain recognition for one’s idea, e.g. a new practice, one needs others to approve of that idea.

The model monopoly paradigm does not explain resistance or challenges when a new practice or change is brought about in an organization. It rather offers an interesting perspective for understanding the relations between actors and how actors are able to draw on these relations to promote their interests. Here, the model-strong is the one who is able to promote his/her interests through a relation to someone who is model-weak. If a new practice is being introduced by actors who are perceived as model-strong, the model-weak are less likely to interfere. Rather, they will conform to the authority’s initiative. Without interference, challenges are less likely to appear. This way of introducing a practice in a top-down fashion is very imposing to the actors (Nielsen & Vedsmand, 1999). However, in a hierarchical organization such as hospitals, top-down management might be a feasible approach.

Being model-strong is a power resource. The concept of model monopoly suggests that to successfully introduce a project actors have to be model-strong. To be in a position to achieve influence their competence must be acknowledged by their model-weak colleagues. This influence is the foundation for attaining authority and power. Otherwise, there is a chance that strong and competing interests will make it a demanding process (Hatch, 2006:142-3). These interests can come from other model-strong’s who do not approve of the initial idea. There is also reason to believe that other actors who are equally model-strong may oppose the model monopolists if they are not allied. Those are in possession of rich and relevant models as well, and will try to have their say. If actors having opposing interests are model-strong, they can out perform the idea of a new practice. This can be challenging because interference is likely to make the introduction process stagnate. Who possesses power resources, and who is model-strong? In an organization, this will affect the perception of a new practice being introduced and whether the introduction will succeed or not.

Master-apprentice relationships

Historically, learning in the clinic has often occurred through different types of informal relations between colleagues, so-called *master-apprentice relationships* (Hargreaves, 1996; Madsen et al, 2000:20). Such an apprenticeship consists of a “master” who is the experienced and well skilled senior colleague, and an inexperienced “apprentice”. The “master” holds expert knowledge and through intensive and proximate coaching of the apprentice, he/she is gradually let into the domain. This relationship can be aligned with a *superior-subordinate situation* (Welch, 2006:3). According to Welch (2006), such situations may help the subordinates (apprentices) to “understand the hierarchical organization” of the hospital (ibid: 3). The master-apprentice approach is a relationship through which one may exert authority over others action. Some researchers and clinicians now oppose this method is because it is based on too much subjective decision-making. Whereas others still approve of this method. This was an issue for the colon project as well, an aim was to standardise a new method of teaching and the master-apprentice approach had to be discarded.

2.3 Change management and new practices

Changing a practise may result in processes at the organizational level, which need to be managed. As argued by Hayes (2006) change is necessary if an organization is to be competitively effective. *Change management* in organizations entails processes and tools for managing changes at the organizational level (ibid; Worren et al, 1999). Such tools can be strategies and structured approaches to help transform – manage – the individuals in an organization in the course of a change. According to Grønhaug et al, (2001:269), to manage work-related changes is to create, coordinate, and to give direction to changes.

How to manage changes

Changes can appear as a result of developments in knowledge and especially scientific knowledge, like a new practise being introduced (Grønhaug et al, 2001). Therefore, new ways of organizing the work structure will be in demand. Sometimes changes must be made to meet the challenges of new expertise and to benefit from possibilities. Sometimes, changes may also result in losses. Hence, to handle the resistance against changes, Grønhaug et al (2001) state that one has to understand its causes. When introduced to new

practises which require change, organizations behave differently. This behaviour will depend on the nature of the organization (Grønhaug et al. 2001). Either they are flexible, or rigid in their response to changes in practise. Some organizations have an openness towards accepting change, innovation and new practices (ibid; Shortell & Kaluzny, 2000). They adopt a future-oriented thinking, there is an open climate, and they are welcoming towards changes and rearrangements. Trying and failing new practises is accepted and employees can communicate their feelings openly. Other organizations will have a more rigid culture; they repel, and even fear changes and believe that it will lead to destruction. Such organizations rather appreciate predictability and stability (Grønhaug et al, 2001). Alterations and restructuring of existing patterns will bring out their defence mechanisms. Hence resistance is likely to appear.

Already in 1951, Kurt Lewin defined three phases to describe what processes that operate when changes are implemented (Lewin, 1951). He believed that if the changes were unwanted, it was probably because they were perceived as a threat to the already established values. Lewin's model was simple in that it entailed an *unfreezing*, *changing* and a *refreezing* phase (Grønhaug et al, 2001:271; Hayes, 2006:153). According to Lewin (1951) 'Managing changes' implied either to *reinforce the process of change* or to *impair the resistance* against it. Newer theories focus on several aspects within the organizational setting that determine whether actors accept change or not.

Denial, reaction, exploration and adaptation; A process theory of the reaction pattern to changes

One such process theory seeks to explain how individuals react when the changes are unwanted (Woodward & Bucholtz, 1987; Scott & Jaffee 1988 & 1989; Jick, 1993 in Grønhaug et al. 2001). It describes the reaction pattern in four phases and briefly suggests how to successfully deal with them. This process theory is supposed to be used as a set of guidelines for managers who are planning to introduce changes to their environment.

During the *Denial phase*, there is a cognitive and emotional blocking of the fact that some new, unwanted change has to happen. Here, it will be important to allow enough time for people to think and realise what is actually going on. A way to do this can be to explicitly inform through meetings etc. that this specific change will be induced into the organization (ibid). Next comes the *Reaction phase* where the truth becomes apparent and individuals

react with anger, fear and disappointment. To an extent, these two phases resemble Lewin's *unfreezing* phase (Lewin, 1951; Hayes, 2006). The fact that a change will be implemented has not yet been accepted and individuals are in a state of experience loss and despair. Some may suppress their feelings and shut out other people. This will require even more time to get over this phase. However, the climate of the organization plays a part here. The less acceptable it is to show negative reactions, the longer it will take to get out of the reaction phase (Grønhaug et al, 2001). For the management, the main goal in this phase should be to allow people to "react out" so progress can continue. It is suggested that time should be spent on talking with the staff, and let them express their concerns and also take into account a momentary decrease in overall productivity (Woodward & Bucholtz, 1987; Scott & Jaffee 1988 & 1989; Jick, 1993 in Grønhaug et al. 2001) .

When one has acknowledged that changes have occurred the *Exploration phase* has been entered. This phase is similar to what Lewin (1951; Hayes, 2006) refers to as the *changing* phase. Here, an acknowledgement of the change process takes place. One will aim at expanding the horizon, and trying out new perspectives. This may take a significant amount of time, but eventually the new reality will be accepted. New relationships and possibilities become visible during this phase. Hayes aligns this with a *mental-model shifting* (Hayes, 2006:153). In chapter 2.1-2, the concepts of mental models and mental sets were presented. Hence, this phase implies a shift of ones cognitive appraisals. The last phase is the *Adaptation phase* (Grønhaug et al, 2001). New visions will appear and further planning continues. During this phase, the new roles and tasks become clearer, and people will have found their own place in the new setting. Lewin's *refreezing* phase encompasses the settlement of a new mindset (ibid). In this last phase, the change process has incurred and one can now return to a state similar to before the change was introduced (Hayes, 2006). After this, there will again be room for being open in the organization, and to feel that it is safe to engage and communicate with co workers.

These different phases suggest how a manager can adjust the behaviour to the level of the staff. Though, it is not much specified *how* to go about to uncover these conditions in the organization. However, focusing on team management and education of teams will pay off and so will also an effort to remove any traces of conflicts remaining (Grønhaug et al, 2001).

3. Methods

In this chapter, the overall approach and methods used to obtain the research material will be described. The rationale for selecting the case study will be outlined, and a description of the techniques used will be presented. Towards the end of this chapter, I will reflect on the generalizability and quality of the study.

3.1 Overall approach and rationale for the case study

This study aims at understanding the organizational processes involved in introducing new technology in a clinical setting. The setting of the study was the surgical department in a Central Hospital in Norway, where the procedure was implemented. To introduce a new clinical technique like this is socially and organizationally demanding. A case study approach may yield information and insights that a broader, more quantitative approach could not do (Marshall & Rossman, 1999). In a qualitative approach, a wide variety of techniques can be applied which include case studies, participant observation and in-depth interviewing. In a single-case study, one examines one case closely in order to obtain answers to general research questions. This approach allows flexibility so that changes can be made during the study if this is found necessary. Researchers also refer to the qualitative approach as “the cycle of inquiry”, because going through the cyclic work of defining research questions, collecting and analysing research material continuously reshape the study (Marshall & Rossman, 1999:25).

3.2 Selection of research site

During the internship of autumn 2006, I got the opportunity to spend eight weeks at the R&D department at a Norwegian hospital (hospital A). At that time, the colon project was a joint venture between the R&D department and hospital B. This hospital had made an agreement with the R&D department for a structured transfer of the specific skills required for colon surgery. Together with my supervisor, a research protocol was prepared and the

protocol for my master thesis was written. I was going to do a case study of the implementation of colon laparoscopy into the surgical department at hospital B.

As mentioned above, the motivation for selecting this hospital department is first and foremost that the hospital made a deal with the R&D department to buy the implementation of the technique. Secondly, it represents a traditional hospital department taking part in the introduction of a new laparoscopic procedure. How new procedures are introduced in traditional departments, is different from innovations in a R&D department, as the latter is cross-disciplinary organised with the mandate of developing new technologies and practices.

3.3 Methods for constructing the research material

To construct the research material, I spent one month (4 weeks) doing fieldwork at hospital B. An interpretative qualitative approach was applied with a combination of in-depth interviewing, observation and document analysis. A study of this organization was conducted to gain knowledge about how the implementation of colon laparoscopy took place. With an instrumental case study, the purpose is to generate a few insights into an issue (Silverman, 2005: 127), like the implementation of new practices into health care. The collected research material sheds light on how the involved actors interpret their situation. In the following I will further outline the techniques that I used.

Interviewing

The main aim of the study was to learn about challenges associated with the introduction of a new practice – the colon project – and to obtain first-hand knowledge of this practice. In-depth interviewing was the main method used in this project. Drawing on “The qualitative research interview” (Kvale, 1997), an interview guide was constructed. This helped me obtain the necessary information about the practice at the hospital from respondents’ viewpoints. This interview guide was also adjusted to the different informants as I got a deeper understanding of their role. Because the qualitative method is a continuous “cycle of inquiry” (Marshall & Rossman, 1999:25) and partly because the interview guide was improved after the first interviews, some of the informants were interviewed twice.

The second until the fourth week of the stay were almost fully scheduled with interviews and activities in the theatre. My initial plan was to interview one or two persons per day, but this turned out to be rather impractical. An interview required extensive preparation in the form of adjusting the interview guide according to the information I continuously received, not to mention the time spent on transcribing the interviews. The last interviews were conducted during week five. Altogether, eleven interviews were conducted with a total of ten individuals. Of these, two were follow-up interviews of the same individuals and one of the interviews was conducted with two individuals simultaneously.

Silverman characterizes such interviews as “an interpersonal drama with a developing plot” (2005: 154). During the interview, the informants were asked questions about their background and position, the background for the project and about their involvement and influence on the colon project (see appendix for interview guide). They were also asked how they perceived this project had affected the situation at the workplace. Some were asked whether they perceived this project as challenging their role as clinicians and whether they thought the management should have taken other actions. I also asked questions regarding whether they experienced any resistance from others.

Through the first of my informants, I gathered a lot of information about the colon project that allowed me to decide on how to continue with my research project. It also helped me decide which questions that would be necessary in which particular interview and which ones will be unyielding for a specific informant. The interviews lasted between 1 and 1 ½ hours. A tape recorder was used to tape the interviews so I could focus on visual aspects like the body language, and the conversation during the interview.

According to Kvale (1997), the art of posing good questions is about how well the interview questions capture the essence of what you are interested in. So, this was the most difficult part, to transform research aims into questions, which could be posed to people without the same insights as me. My interview questions were modified several times as I progressed with my research. Kvale (1997: 90) further recommends that for increasing the quality of an interview, some criteria must be fulfilled, but they are mere guidelines. These criteria include:

-
- Rich, spontaneous and relevant answers, the longer the better
 - The questions should not be leading, unless this is the intention.
 - Short and yielding questions are best, which keep the person talking
 - The interviewer should clarify his or her intentions, to prime the interviewee and to make informants stick to the issue
 - The interpretation of what is said, and its relevance and importance to the issue of interest

An overview of the staff involved in the colon project (surgeons, nurses, etc.) suggested approximately ten individuals from the hospital, who were suitable to be interviewed. Of these ten, two were cancelled due to relevance and time constraints. One of the interviews was partially conducted with two informants. The anaesthetic personnel were not included because of time and availability constraints. There was also no anaesthetic personnel *specifically* assigned to the project. Altogether, the informants enrolled consisted of eight surgeons and three nurses from both institutions.

Informants								
Surgeons	Richard	Joe	Linda	Lars	Steve	Christopher	Aaron	Martin
Nurses	Nina	Karen						

Figure 2. In random order, names are changed and replaced with pseudonyms to ensure anonymity.

I wanted to interview those that had been involved in the colon project over a period of time, as they could provide most insights. Because of this, they could not be randomly elected. Secondly, I was referred to my informants on the basis of information from informants. This strategy is often referred to as the “snowball technique”. This was also necessary for me, as I was not familiar with the hospital or its staff. It may seem to appear a bit as an “inner circle” of people referring me to other people they *wanted* me to interview. If I were to do all this a second time, I could probably enrol several more informants.

Observation

To obtain detailed and descriptive research material on the organizational processes, observations were performed during operations, and during a meeting. Field notes were taken and I also planned observing a few of the laparoscopic procedures, mostly to observe the teamwork during this new procedure. The latter was unfortunately impossible as no such procedures were carried out during my stay. Instead, I chose to observe the teamwork during open surgeries of the colon surgery. Being observed may impose a feeling of awkwardness and thereby making the ones observed feeling uncomfortable. This was informed about in the “informed consent”. This was non-participatory observation where one directly observes the actions of the participants, without being an active participant.

Document analysis

Participant observation and in-depth interviewing was supplemented with a review of documents. This is an “unobtrusive method, rich in portraying the values and beliefs of participants in the setting” which is to be studied (Marshall & Rossman, 1999: 116). Analyzing previous documents helped me develop an understanding of the project and its background. Meanwhile there was not much documented evidence of this projects’ progress. The documents I were given, was a protocol for the randomized control study plus a couple of conference papers. Another drawback is that initially, the documents were not put together to answer my research questions, and therefore their relevance to my study was somehow limited. Anyhow, studying the material on the establishment of the R&D department provided useful for this project as one of the individuals behind the idea of the R&D department, was also involved in the colon project.

3.4 Reflections on my role in constructing the data

I was introduced to hospital B through the head of the department at the R&D department. Thus, the first meeting with surgeons from hospital B was easier for me than it would if I had shown up alone. In other words, the head of the at the R&D department had the role of a “gatekeeper” (Cranefield, 2007) for me, who gave me access to an interesting case. Still, the staff at the hospital may have considered this project a bit intrusive as someone outside of the hospital is coming to conduct a study on ‘internal organizational processes’. During the

first week of field work at the hospital, I was introduced to the department and its staff. I introduced myself as a student from the master program of health management and economics, University of Oslo, doing research on the implementation of the colon project. I explained to all of my informants that I am here for the purpose of getting insight into the colon project. Several of the surgeons I met knew the institute well.

How I will affect the object of interview, and how this will affect the information I will obtain

Being a young, female student with a visibly different ethnic origin might have affected my research outcome differently than if I were an elderly male student. A man in his late thirties could have imposed a different feeling on the informants, by being perceived a bit more authoritative. Some of the staff did ask me about my origin and I even had a chat about culture and family with one of them after the interview. Although they may have felt a bit sceptical, it seems like this did not constitute a problem for me in enrolling individuals as informants. Some of them referred to me as ‘the psychologist’, which I explained I was not. Some were reluctant to give me information on the internal matters of the hospital. Mostly however, I experienced that informants enjoyed being interviewed and they also told others about me which made it easier for me to later enrol other informants.

3.5 Analysing the research material

The analysis and interpretation of the research material was an ongoing process throughout the whole project. According to Silverman (2005), the analysis of the research material is not something distinctive from the other stages in a research project. It is a simultaneously carried out process which takes place as the research material is constructed and helps mould the material into the final outcome. Kvale (1997) completely rejects analyzing interviews only after transcripts are obtained and argues that a good interviewer has already finished a large part of the analysis during the interview. The greatest issue with interviews as a research method is the part where you analyse informants’ perceptions (Silverman, 2005). For an event – like this implementation – there are as many meanings and interpretations attached as there are individuals. When transcribing, the dilemma was to decide how much their subjective meanings about the experience should weigh.

After conducting the interviews at the hospital, I felt close to a “point of saturation”. Kvale (1997) characterizes this point as where one feels that most of the answers are obtained. It was not until after analysing the research material that new questions arose. All interviews were tape-recorded and seven out of eleven interviews were fully transcribed. The other four were partially transcribed. This was due to time constraints and also because some information was similar to information from the previous interviews. Transcribing is a process in which you have to carefully listen, and write down everything during the conversation, word by word preferably. But you can also choose to focus on some information and exclude some. This was due to time constraints, as transcribing one single interview could take up to two-three days and I was also under time pressure; sometimes I had to finish transcribing of the interviews already conducted to be capable to prepare for the next interview. Moreover, the initial transcripts were kept so at any time it was not difficult to get back to the ‘real’ interview. Altogether, the total number of pages with interview transcripts was about 80 pages.

There are several ways to interpret information from in-depth interviews. Kvale (1997: 126) mentions so called “meaning condensation” or categorization of individuals’ opinions to depict an overview of the extensive information that one is likely to end up with after such interviews. With the total page number in mind, essential aspects were highlighted during transcription so they would be easier to trace later. My co-supervisor recommended a matrix, where you fill in the essentials in a table. This idea turned out very helpful for getting an overview of the different individuals’ stories. The matrix was based on my interview guide and thus had to be adjusted to fit all the divergent responses. I had to get back to the original transcripts several times and even the original tape recordings were indispensable when ambiguities arose.

Looking back, the analysis was done on several levels: when conducting the interviews and during follow-ups, during transcription of interviews and when writing the final text.

3.6 Ethical issues associated with in-depth interviewing

The Norwegian Social Science Data Services (NSD), a national resource centre servicing the research community, approved the ethical aspects of the study. The centre’s main objectives are to secure easy access for the Norwegian research community to data and to

provide various services. A proposal was submitted to NSD that outlined practical details about the methods for collecting of my research material.

In studies involving humans as study objects, one wants to ensure confidentiality of sensitive information and to identify “potential hazards” to the individuals enrolled in research (Silverman, 2005; Kvale, 1997). Names have been changed with pseudonyms to preserve anonymity. Besides that, I have made an effort to ensure that indirect identification of individuals would be difficult. Regarding possible negative outcomes for the objects, like personal distress associated with confidentiality, a written informational letter was given to all informants and written consent was obtained (appendix). Later, on recommendation from my supervisor professor Ole Berg, the names of the hospital departments were made anonymous. Altogether, it should be quite difficult to link a piece of information to any specific person. However, it should be mentioned that complete anonymity may have been compromised.

The initial plan was to refer to the particular hospital by its name, but this was abolished after recommendation from both of my supervisors. Even if attempts have been made to ensure confidentiality at its most, I would like to assure my informants that information that may possibly be traced back should not be of a nature that can have negative implications for the person. Also, only direct citations can be traced back to the person. I have also put an effort to carefully consider to which extent it may be necessary to inform specifically from which profession/gender a particular statement comes. This will help limit the possibility of indirectly identifying statements.

The purpose of the study was outlined in “informed consent” (se appendix). This was handed out to informants in plentiful time before the interview. The informed consent takes into account the confidentiality of information I will obtain during interview. It gives information about informants’ right to withdraw from the project at any time, without any consequences or questions. The research material on tapes will be deleted when project is finished and approved. To my informants, I also presented the possibility to read some parts of the paper before publishing. I therefore conclude that an effort has been made to ensure informants that by giving me the information I needed, they would not risk exposure.

3.7 Reflections on generalizability and limitations of the study (reliability & validity)

“Even seemingly subjective reports such as those of police or journalists might reflect deep prejudice and moral judgements without the individuals being aware of these attitudes and feelings” (Strauss & Corbin, 1998).

Social structures are complex with several interacting variables that can be difficult to untangle. Using a case study design has certain methodological drawbacks which I will outline shortly. In such studies, it may appear difficult to get certain details of the work experience of the staff there. The limitations of my study are affected by several factors: the choice of hospital, informants and the project. The first has already been discussed in previous chapters and will therefore not be elaborated on any further.

As mentioned earlier with choice of informants, I wanted to enrol those involved in the colon project and therefore I had to rely on information from the hospital (B) and other informants. Random selection was unlikely. Most of the informants associated me with the R&D department from hospital A, like an “emissary”. This may quite likely have affected information obtained on how the colon project was introduced in the department. Still, I tried my best to get the viewpoint of informants with different standpoints. This study is retrospective in nature which means it is based on historical research material and on informants’ stories. The biggest problem with retrospective studies is that some important information that is needed may be hard to get. The ‘story’ is already constructed, but the process cannot be verified (Hess, 2004).

Validity of an interview transcription is difficult to state, should it state word by word, or should one choose to leave out what is unclear? Transcription is what is often seen as the solid material. But there are some issues related to this process. The process itself indicates a change from one context (oral) to another (written). Depending on my intentions and research questions, objectivity may often be compromised. Transcriptions are social constructions (Kvale, 1997). Also, different circumstances may make it necessary to emphasize aspects of the interview differently. There is unfortunately no objective answer on how to do this; all are different ways to construct an oral report.

A lot of decisions regarding the methodological soundness of the qualitative interview took place while the interviews were going on, because of the dynamic nature of interviews; they're more like a conversation. This required preparation and competence, so I did some pilot interviewing before leaping into it.

One major drawback of the observational method is the observer bias – which is difficult to control for and totally abolish (Greenhalgh & Taylor, 1997). The researcher will always have subjective views and thoughts that can and most surely will, influence the data collection. Field notes were taken right after the observation was made to make use of what was being observed. This was to get the most accurate information, while it was still fresh in my mind.

A conclusion at its most extreme, might be that this study of the particular section at a department in hospital B does not represent this project at another point of time or any other project in this section, any other hospital or any other setting. However, it is important to point out that in qualitative case studies one does not aim at making statistical generalisations as this is not possible. Instead the aim is to make analytical generalisations, which means that one tries to contribute to existing theories on the topic (Riege, 2003). In total, I will therefore argue that the methodological design of the study makes it quite sound and transparent.

4. Introducing the colon project

In this chapter, the historical background of the colon project at hospital B is outlined. Then, in a chronological order, the different stages of its implementation process are described. I have constructed the story that I present to highlight aspects that I found interesting for answering my research questions. Hence it does not necessarily represent “the true story”, or the same story that would be given if you asked an accidental informant about what happened.

4.1 Birth of the colon project

“I have been concerned with cross disciplinary arrangements and new, updated and well documented methods for use in the health care” (Richard, surgeon).

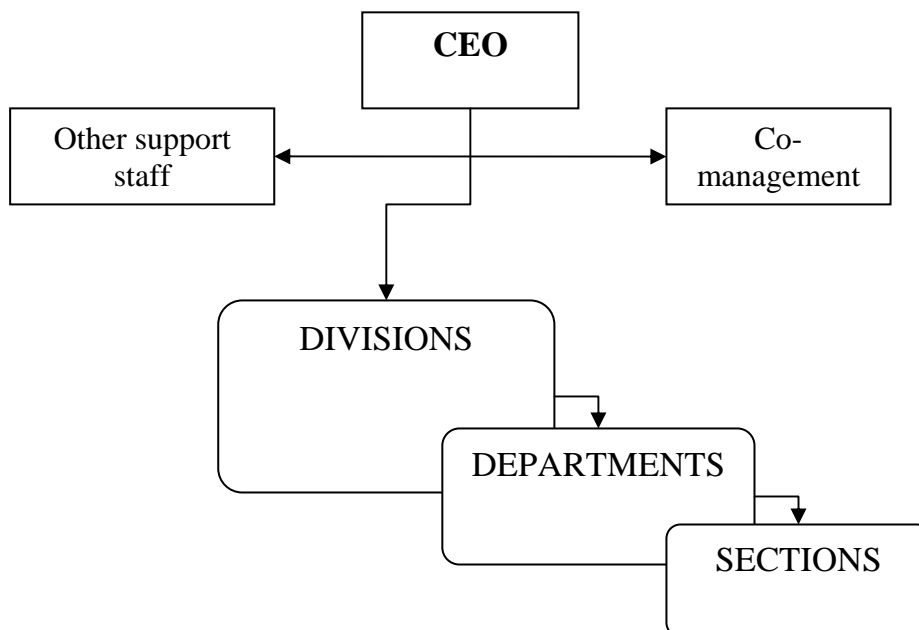


Figure 3

Like most other hospitals, hospital B is arranged hierarchically where the top manager (CEO) delegates specific tasks in a top-down fashion to the management of the different divisions. Divisions are organised into separate departments and departments are again organised into smaller sections with their own management (see figure). As for the surgical

department, there was a section for urology, one for orthopaedics and one for gastroenterology etc. The colorectal area belongs to the section of gastroenterology.

The colon-project can be characterized as a “package” bought by hospital B from the R&D department of hospital A. It included careful teaching of the specific skills required for colon laparoscopy to the surgeons at the hospital because. Technically, none of the surgeons at hospital B had this expertise. Initially, a few procedures were carried out together with both teams from the R&D department and hospital B, at the R&D dep. After these introductory procedures, a surgeon (‘senior’) from the R&D department would come to the hospital to instruct and assist in procedures. This implementation process would be completed when the team at hospital B was able to function independently.

The main goal for introducing the colon-project to hospital B was to treat CRC laparoscopically. After lung cancer, CRC is the second most common type of cancer in the western society (according to internal protocol). Surgery of the colon is required because of several diseases such as diverticulitis, ulcerative colitis, Crohn's colitis, colonic polyps, haemorrhage and tumours, both benign and malignant (Comprehensive Center for Laparoscopic Surgery, 2005).

It was difficult to state any exact date for when this entire project was initiated and the dates/year mentioned by my informants did not match exactly. The time period seem to revolve around the years from 1999-2001, but even 2003 was mentioned. The inspiration for the project came from several directions. The research coordinator and research executive at the hospital were discussing the introduction of new techniques. They had decided that “the time had come for introducing this technique to our hospital”. So they planned that the R&D department at hospital A was going to be central for the transaction of the technique and for training in the skills required to hospital B.

The initiators of the idea for the colon-project presented it to the CEO at hospital B. At that time, the CEO himself was an earlier surgeon who was interested in introducing new and innovative medical techniques. Different departments were given different projects to implement, and one of these projects was going to be the colon-project for the gastroenterological section at the surgical department. Offering colon laparoscopy would give the hospital both a competitive advantage by attracting patients and a great gain from the cost containing potential of the project.

Actually, laparoscopic procedures had been performed and the surgeons at hospital B were experienced to some extent. Still, it had been claimed that to date, there did not exist any standardised training programme for skills in laparoscopic CRC surgery in Norway. Some surgeons still argue that the traditional way of teaching surgery – the traditional master-apprentice approach – is best. That had also been a main concern to both the research executive and the research coordinator at hospital B, and was a concern also to the management at the R&D department. So, to eliminate subjectivity during the learning process of the technique, it was important to develop a standard measure. This is another side of the colon project which had less to do with my research.

Richard was involved in research and development at the hospital and had also been involved in generating the idea of designing a department for research and development (R&D department) (Lærum & Stordahl, 1991). Together with his colleagues, he initiated the idea of starting collaboration with the R&D department for implementing this procedure at the hospital. He told me that:

“Somewhere between 2001 and 2002 I think... we saw that most of the problems concerning port-site metastases were vanishing, which have been the main reasons why treating cancer laparoscopically had not been accepted before. I wanted to take part in that new development and wanted to start a project on cancer-laparoscopy at the hospital where I worked.”

Hence, the cooperation was established between hospital B and the R&D dept., and they arranged for a “package” of services paid to the R&D dept. The amount has been said to be insignificant for the department. According to Aaron, surgeon at R&D department, it was more of a “symbolic value of playing a role as a centre for generating this type of expertise”. According to the information, this package was agreed upon in meetings including the management group of the R&D department and the research coordinator and executive from hospital B. The agreements took shape of a plan for how to introduce this technique to the surgical department. When forming this plan, the surgeons had several things in mind. First of all, the learning stages for this technique were acknowledged to be steeper than for other laparoscopic procedures. Therefore, one of the conditions for this project was that the transfer of this technique should be as “controllable and structured as possible”. So, the unique aspect with this project was that, to document for the beneficial effects of

laparoscopy over traditional open CRC surgery, a controlled clinical trial was going to be carried out simultaneously. This was both to secure the safety of the patient and for the purpose to train surgeons to become well-skilled performers of laparoscopic colon surgery. "If you want to implement laparoscopy to treat colorectal cancer today, you have to do it through a controlled trial" (Richard).

"Many have failed to introduce new practices through the method of trying and failing. Within surgery we call it "see one, do one, teach one" and this method is not acceptable any more" (Lars, surgeon).

4.2 A better way to introduce a new practise

"I say: try but NOT fail, try and SUCCEED! You cannot be unsuccessful, that's a failure. Therefore, it (the procedure) has to be well prepared mentally before performing" (Martin, surgeon).

The project, it seemed, had two purposes: To introduce laparoscopic CRC surgery at this hospital (the clinical purpose), and a randomized controlled trial (RCT) (the research purpose). Besides, this comparison had not been done with a Norwegian population before. Therefore, a randomized controlled trial (RCT) would be conducted to compare the effects of laparoscopic CRC surgery to traditional, open surgery. As illustrated by one of the surgeons:

"Even though there is existing evidence on the beneficial effects of laparoscopic CRC surgery worldwide, we have reason to believe that the Norwegian population can be different in some important aspects from the UK and US population. Therefore, documenting these effects through a Norwegian study was important" (Linda, surgeon).

Although the surgeons were trained in laparoscopic surgery, the particular skills for this specific procedure were important as "colon laparoscopy is more advanced than other laparoscopic procedures" (Martin). Other surgeons involved in the colon project seemed to agree with this statement. Lars said that "this method of learning a procedure is the correct one, because one should not learn through trial and error".

“It is perhaps less usual to introduce this (CRC laparoscopy) through a controlled trial, but for the procedure to be accepted on a wider level, we have to. Because there has been quite a debate about port site metastases, we have to document every result we come up with. The difference between this method and the traditional ‘master-apprentice’ approach is that the latter is based on a considerable amount of subjective appraisals of the technique; “I do it like this, and you should follow me”. There is no way to document whether these skills are correct or not” (Martin).

To take part in the colon project, a few colon-surgeons were chosen to have their laparoscopic skills fine-tuned for CRC surgery. A team from hospital B was put together, consisting of three surgeons and two nurses. During the learning process, it was important for the team that the developments of individuals’ skills were parallel with the team progress. Therefore, the entire team first attended sessions at the R&D department to observe and learn. There, they conducted a few procedures and learned some practical issues concerning CRC laparoscopy. They also got to observe the total setting and use of equipment, by which the procedures were carried out.

To start with, the ‘senior’ surgeon did the procedures and the surgeons from the hospital B observed and assisted. Gradually, they were given more responsibility and the ‘senior’ assisted and instructed them until they could carry out the procedures independently. All team members included in these teaching sessions experienced this as useful and enjoyable, according to my informants. One of the nurses said: “I felt like being a part of the team, and then you get this spirit of the team...it was fun, I enjoyed it!” This way, they had a chance to observe and learn about the essentials when performing hemicolectomies⁶ laparoscopically.

Then, according to the agreement, the ‘senior’ surgeon came over to hospital B to instruct and assist the team with laparoscopic CRC surgery. He visited the department at the hospital somewhere between 15 and 20 times (according to informants).

⁶ Surgical resection of a part of the large intestine that is diseased.

4.3 “Trouble in paradise”

”Surgery is supposed to be this way. The people seeking to standardize it are on the wrong tracks” (Steve, surgeon).

At the time of my stay, the transfer of the skills appeared to have completed. The ‘senior’ surgeon had finished his job. The surgeons at hospital B had become better skilled practitioners. Although not quite ‘seniors’ themselves, they now felt they could perform procedures independently. But this was not the end of the colon project. Another crucial fact for the surgeons to treat CRC laparoscopically on a widely accepted level was the controlled trial, the RCT. For having enough data, an appropriate number of patients had to be enrolled. According to their protocol, there were an expected number of 750 patients⁷ requiring treatment for CRC that could be considered for inclusion in the trial over a three-year period. To include such a number of patients, two nearby hospitals also were committed to the project. The project was quite ambitious and entailed other goals such as standardizing the teaching method for CRC laparoscopic surgery, standardizing of the anaesthetic method used in the procedure as well as results on five years survival.

“The grounds for conducting the trial are that five years recurrence and survival is supposed to be better than that of open surgery. Since we could not compare with other studies, we needed at least 750 patients in order to make sure that the results were statistically significant” (Linda).

My goal was to obtain an understanding of why the project was being characterized as “moving too slow”. As expected, it turned out that the project had reached a point where it did not progress according to the protocol anymore. In other words, the scientific purpose of the project was in peril. Formally the problem was that not enough patients could be included in the RCT. A certain number of patients were necessary to include for obtaining results where one could conclude that the observed differences of the five years’ survival rate were not a result by chance.

⁷ The number of patients to be included was later reduced from 750 to between 250-300 patients. Initially, the goal was also to yield results on the effects of open vs. laparoscopic CRC surgery under Norwegian circumstances. Since larger studies (UK, USA) have already obtained positive results on these effects, this number was later decided as sufficient. *However*, since this was a central issue during my fieldwork, I will use the previously stated number as a starting point.

There could be several explanations for the slower intake of patients. When inquired about this, my informants agreed that the number of patients included was far from ideal. Some also mentioned that this could have implications for the wider acceptance of laparoscopic cancer surgery in Norway. Some told me about existing counter powers at the department whilst others put more emphasis on motivation and interests. Most informants agreed that the way in which the leadership had organized for the project was far from optimal.

“The top management and management of the hospital and the department have really given priority to this project. And they have done what they can; they passed on responsibility in a top-down fashion, they delegated. So, the weakness lies within the management at the section-level” (Lars).

Martin was very concerned with the quality of laparoscopic skills taught and said that the process of learning these skills should be as optimal as possible. He believed that for the optimal teaching of skills, continuity during the process was important. According to him, this continuity may have suffered a bit because of several reasons.

“It is very unprofessional of them, the continuity during the learning stages should have been better. And the management is responsible for organizing to make this possible” (Martin).

The time span between procedures for the colon project increased, both during the learning process and during the patient-inclusion process. According to Martin, “the project may not have progressed as we hoped...it took a bit longer than expected”. My informants used words such as “stagnated”, “reached a standstill” and even “deadlock” when asked about the present situation of the project. To illustrate, there were 250 potential patients that could be included in the trial, but the number of patients actually included revolved around 100 patients - per year.

“To date, it (the colon project) may have grown in a different direction than foreseen when writing on the protocol, but that happens to most research projects. But we definitely could have reduced the time span of the progress” (Richard).

A matter of disagreement between surgeons was whether CRC laparoscopy should be an available treatment or not, before the clinical trial closes. The argument in favour was that the project had been going on for too long and had occupied enough time from surgeons and

the operation theatre. Besides, the effects of laparoscopic CRC surgery were well documented all over the world, so the trial was rather unnecessary. But the surgeons involved preferred not to offer it while the trial was open since conducting the procedure under strict control was important. Their argument was that the skills required must be taught carefully first. Steve argued that there are several surgeons who are being held back and not being let into this field. By not offering the treatment, the hospital would lose its patients to other hospitals.

“The trial is important but now they must allow others on this hospital to perform this procedure, we can not sit and wait any more. The hospital needs to offer this treatment. Otherwise we will lag behind in the future” (Steve).

But offering CRC laparoscopy before ending the trial meant that it would be performed by someone who was not involved in the colon project – someone who did not have the skills accordingly. One of the surgeons, Joe, told me that those who are involved in the project, are quite skilled and they will soon end the trial and be available to instruct others.

“If someone feels that they are skilled already, they probably are... We say that one should apply this test, or that these standards should be maintained. Someone still thinks it can be performed like it was performed ten years ago and not like it is performed all over the world. That will yield deficient results without being aware of it” (Joe).

Whereas others did not like the idea of imposing such a degree of structure and control on the surgical work:

“This is a handicraft, and there are no definite solutions for how to go about it. You can not tell a woodcarver how to hold his knife and how to carve... it is impossible!” (Steve).

4.4 Lack of leadership skills?

“It has to do with an earlier weak leadership, many poor decisions were made and some of the best surgeons has left this hospital” (Surgeon).

According to some of my informants, the project had not been recognized as important enough by the management on the department/section level. It should be pointed out that most referring to 'leadership' also included managers that were no longer part of the department/section. Some argued that the managers could have interfered more, whereas others held the team (surgeons, nurses involved) responsible. Surgeons expressed a lack of acknowledgement for their interests from the leadership.

When asked what they could do themselves to improve the collaboration, they expressed that to take such projects seriously, a lot of motivation and effort is needed from those who are involved. This lack of motivation was explained by many of the individuals involved to be the reason why they did not 'stand up' for the project. One of the surgeons, Lars, explained this to me:

"Well, I should point out that we have also had dropouts (from project) because of ourselves. But, come on, we can not defend occupying the operation theatre for an entire day, when open procedures are performed in shorter time. That is more of a political problem. We are not the ones controlling the resources. We are just told to save some million kroners."

Leadership and motivation

Richard acknowledged the need for organizing and for promoting leadership skills. He also wanted to perceive what internal reasons could explain some of the processes. But even he agreed that because of 'organizational problems', the team motivation itself was not alone to blame. He claimed himself a proponent of new procedures and practices as he acknowledged a need for executing research and development safely. Now, he was concerned that research and development in an ordinary hospital department may suffer because of the orientation towards other things.

"We have to promote leadership skills and culture in the organization whether we are at the grassroots' level or are part of the management" (Richard).

All informants agreed that most of the problems could have been dealt with internally, and that the project would not have suffered. They expressed that they could have received more

backing from the management. Also, they suggested that the individuals involved in the project should be in charge for it as well. Nearly all informants explicitly agreed that the leadership was to blame. When asked a representative from the leadership, the answer was:

”When introducing such new procedures, it is very important that one is intrinsically interested, because these kinds of procedures require a lot from you. They require a tremendous amount of time, and an incredibly motivated team; especially when you know that open surgery only takes one-third of the time of a laparoscopic intervention” (Steve, surgeon).

There was a disagreement about the responsibility for this project; how much should the management have and how much should be allowed to the ones involved. Motivation played a role as well; without it nobody would want to have responsibility. The ones involved in the project had the main responsibility for it. Still, it was not totally in their hands as they were dependent upon the management regarding some decisions, such as ‘the occupation of the operation theatre’.

An overall impression of informants’ view of the leadership was difficult to obtain and the story depicted above shows some of this complexity. In the next chapter, the theoretical perspectives presented in chapter 2 are used to shed light on this story.

5. Discussion

In this thesis the following two research questions have been addressed:

1. *What challenges may one face when introducing a new practice in a hospital?*
2. *To what extent do actors have a common interpretation of the challenges they face when introducing a new practice?*

In the previous chapters I have given an account on my case, and will in this chapter relate my findings to the related research that I presented in chapter 2 on knowledge boundaries, power and change management. The research presented offers an interesting approach to why changing a practice is not a trivial pursuit.

5.1 Impeding knowledge boundaries

“Things were a lot simpler before the bureaucrats took over the health sector”
(Steve, surgeon).

The first research question was about what kinds of challenges that may appear when a new practice is introduced into a clinical organization. In organizations, highly specialized knowledge in different fields exists side by side. Traditional hospitals on the other hand, are organized in a manner that tends to “collect” different medical disciplines in separate departments⁸, leaving little need for interference or sharing knowledge. Carlile’s (2002) pragmatic approach to knowledge boundaries impeding innovation can shed light on existing differences in practice, like laparoscopic vs. open surgery. According to information from my informants, these two procedures seemed to come from two different worlds.

The ‘expert’ problem (Chi et al. 1982; Madsen, 1999) implies that by possessing expert knowledge, one is also in a position to create boundaries to other fields of practice

⁸ See also figure 3.

(Shanteau, 1992). Carlile (2002) emphasises that because of a pragmatic boundary it is difficult to have room for knowledge from other domains of practice. The practical skills of traditional surgery have been acquired through years of extensive training and experience and are therefore hard to let go. Highly specialized knowledge is so thoroughly internalized as practical skills that actors will tend to create boundaries towards actors not having these skills. Consequently Mork et al. (2007) argue that this boundary maintenance activity may become an obstacle to learning and innovation. A challenge may be that sub-optimal practices may develop and thereby boost a resistance to a new practice being introduced (ibid).

In this case, a pragmatic difference between open and laparoscopic CRC surgery would imply that some surgeons will be unwilling to give up their former skills of conducting open surgery because they have invested in these skills. For them, laparoscopic surgery represents a new practice which is 'better' than the traditional open surgery. A change of practice will require a radical shift in what is already established and therefore result in a *competence destroying* of the former skills (Christensen et al. in Robertson et al, 2006; Henderson, 2006). The colon project did therefore pose a threat to the interests associated with the old competence. Some of the "go slow" reception the new project was met with may have to do with this. To understand this, it was important to acquire an insight into how informants viewed this new procedure:

"To begin with, it (the procedures) took a really long time and we could spend all day in the theatre. Several of us were pretty hesitant and insecure, because we had no standard to measure up to yet" (Nina).

"The (surgical) procedure itself, we knew. Because this is a lot different than open surgery, the difficult part was the angle of approach. The placing of the port-sites is very important. You have to visualise the human anatomy and keep in mind the structure of the patient as well as the amount of body fat. Fat people are the most difficult ones" (Lars).

The amount of body fat seemed to be an issue; because it tends to accumulate around internal organs, it "makes it difficult to navigate with a scope in a pulp of fat" (Lars). Nurses agreed; they explained that because they have to deal with the positioning of patients, their job gets trickier as the patients get heavier. These problems did not exist under traditional

open surgery. Hence, it is a pragmatic difference in practice which is leaving the laparoscopic method in the defensive. This new procedure was widely perceived as technically challenging in itself. Several of the surgeons explained to me in detail the technical difficulties concerning the use of a scope; navigating laterally and inverse. “Just the fact that you are not using your hands to manipulate organs makes it quite tricky”. To begin with, neck pain and tiredness seemed to be a common feature, contributing to frustration. But the team still expressed optimism and they were pretty sure that “once we master the technical skills, we will get back on track”.

The colon project was delayed, and not running according to the schedule. The reason was that there were not enough patients included in the trial, which was important for it to be scientifically sound. An important issue for my study was to find out the reason for why some patients were not being allocated to the project. Some of my informants explained that “colleagues with different interests prioritize differently”. But was this “prioritizing” caused by a resistance to a new practice? In the next section I will discuss whether the new practice posed a threat to the old competence:

Laparoscopy and boundaries

Expert knowledge may become a mental set leading to fixation (Madsen et al., 2000). Fixation was described as a lacking ability to think outside of domains (Wiley, 1998). Linda (surgeon) explained to me that traditionally, gynaecologists have always been using viewing scopes and such instruments in their clinical work. Therefore, the gynaecologists had encountered fewer problems and spent lesser time to internalize the skills of laparoscopy. As a result, their skills may have developed more rapidly than the “traditional” surgeons. It seems that the gynaecologists did not experience any pragmatic boundary because laparoscopy did not differ much from their previous practice. Can this count as support for a pragmatic boundary between laparoscopic and open colon surgery? This is difficult to tell; in that case the question arises to which degree two practices should differ before a “boundary” is present. Anyhow, the gynaecologists’ domain of expertise was not being replaced or changed. This did not require a shift of their mental set. Consequently, their expertise – their technical skills – was just as domain specific when performing laparoscopy.

To see if actors shared their interpretation of challenges (research question 2) was important for obtaining answers to the first research question from a respondents’ point of view. An

interesting finding, although contradicting my expectations, was that *none* of the informants were sceptical of the laparoscopic method. For them, complications associated with CRC laparoscopy was a temporary issue. Rather, they seemed to have come to terms with the fact that future surgery would comprise mostly this method. Indeed some said that the introduction of the new procedure meant new and exciting challenges for them. Both nurses and surgeons had a quite optimistic view on new practices. These are some of the comments from the clinicians involved:

“All surgery on colon will be performed laparoscopically in the future, because the patients will demand it. We need to offer this treatment to still be a part of the game” (Steve).

“It is a great gain for the patients” (Nurses).

“In the future, it will be more talk about a “laparoscopist” than a surgeon” (Christopher, surgeon).

“Yes, there were some problems initially, but you have to move on. I have nothing more to add but the fact that everybody involved did a great job” (Joe, surgeon).

Competence destroying?

The positive reception of the new procedure may reflect the fact that the laparoscopic procedure was not perceived as *radically* different from that of open surgery. The pragmatic boundary assumes a difference in experts' practice, and if this difference is small or not existing, it will of course not impede the spread of knowledge. Exactly this is difficult to untangle in this case. They seemed (at least at that point of time) mentally prepared, whether or not they had adjusted their mental sets according to the new practice. Findings suggest that some problems were certainly apparent when the procedure was being implemented. However, many of my informants perceived these to be temporary. Moreover, informants may not be able to recall all the issues, especially now that the introduction was completed.

How do we then explain the delay of the project? Even if there was any resistance based on boundaries towards unfamiliar practices, it may have been overcome by the time I started my research. A possible “shift” of the mental set was difficult to prove. But resistant forces (present or not) can apparently not explain the fact that enough patients were not yet

included in the trial. What I may have identified as boundary-creating challenges, e.g positioning of the patient and camera-angle, were only obstacles which they would overcome by time. Consequently there was not much impeding the shift of practice. Nor were there any radically new elements of practice to threaten the old competence.

Important information may have been missed because of the selection of time, place and choice of informants as well. Also, if my fieldwork had started at the time of the implementation of the colon project, a totally different picture could have been depicted. *Retrospective* in nature, the approach of my study stands a bit too weak to unravel the full story behind. Furthermore, my inquiries also revealed that the delay problems could be part of a bigger picture; hindrances elsewhere in the organization and the management of the project.

5.2 Existing power relations

“Individually, they are great surgeons, but they cannot work together” (Anonymous informant).

Power and the role of management are difficult to untangle. The managerial role is a position which entails power (Hatch, 2006). But power is not something associated only with managers and management. Other actors might have power by being in the possession of important resources. Examining existing power relations can provide us information about whether or not there were any competing interests which held back the progress of the project. Actors possessing power resources are in a position to affect outcomes and decisions for own benefit (Weber, 1968; Hatch, 2006). An actor having *diverse interests* can be problematic if he/she is also in the possession of important power resources. When asked, informants explained that they could not deny that such kind of decisions had taken place. But they seemed reluctant to confirm it:

“We do not want to blame anyone specifically... but I will say that there have been taken decisions and actions, which in the long run have not exactly been in favour to the progress of the colon project” (Anonymous).

Based on the information from some informants, it seemed that there were in fact other interests operating in the organization. There were interests which could be considered as contradicting a successful introduction of the colon project. The perception amongst *some* of my informants was that two individuals disagreed, and one of them was in a position to get his/hers way through. Another informant even said that if one of the persons involved in the colon project had the managerial role the project could have progressed as initially planned, because “then we would not have lost control”. According to this information, power seemed to be a relevant issue in slowing the progress of the project. This finding is in line with what others have found (Hatch, 2006: 310; Scott & Davis, 2007:205).

”The person who is in charge at our level has implications for this project. Is the person interested or not in this project?” (Anonymous)

Diverse interests and important power resources thus can affect the success of ones purposes. Exactly what were these competing interests? This issue will be further explored by the help of Bråten’s (1973) model power paradigm.

Model-strong vs. model-strong

According to the concept of model monopoly (Bråten, 1973; Kanstrup & Christiansen, 2005), model-strong actors will have an advantage over model-weak actors. Model-weak actors will be dependent on the ones holding rich models. Being a model monopolist makes it easier to gain recognition for ones interests. In this case, an optimal team consisted of the surgeons who were well skilled in colon surgery. They can be characterised as model-strong actors with an agenda that everybody else was thoroughly convinced of. Laparoscopic CRC surgery was known to be a well documented method and the colon project had gained recognition in the clinic. Another detail the model-strong surgeons had decided was to introduce a clinical trial alongside. It was important for several reasons, as mentioned earlier (see 4.2). They agreed that for this practice to be widely accepted, it was important to show that the scientific part was sound.

As presented in 4.3, somewhere through this process the team met challenges. The lack of continuity during the learning process and too few patients included, was really affecting the colon project. There is a chance that strong and competing interests could make it a

demanding process (Hatch, 2006:142-3). To what extent do my findings explain that the model-strong surgeons were encountering competition?

To achieve influence, actors' perspectives must be acknowledged by other actors, the model-weak. Informants widely agreed about the skills of the surgeons. There is also reason to believe that other actors who are equally model-strong may oppose the model monopolists if they are not allied. Steve and Lars were both in favour of the new practice finding its way to their hospital department. They praised the method and its benefits for both hospital and patients. Here were two surgeons, almost equally experienced and skilled. Both seemed to hold insights and skills within laparoscopy, although in different fields. Both were model-strong, and in possession of rich models (mental set) relevant to the project. What was there to disagree on?

Traditionally, the introduction of a new practice in healthcare – especially surgery – has been performed through a master-apprentice relationship as mentioned in chapter 2.2. As mentioned, some of my informants did not think of this as an optimal approach anymore. However, others still approved of this approach as an adequate and reliable method for teaching skills in surgery. The trial was occupying the capacity of the surgeons and therefore, it had to be closed before they could teach other apprentices. According to Steve, this was not necessary because the treatment should now be offered formally.

“As the manager, I have to step in and put an end to this. Now, it is time to implement this method so that we can offer it on a broader basis to our patients. They have had enough time and the trial should be prioritised yes, but I can not continue to hold it back any more”.

On the other hand, Lars was determined that it is better to complete the trial before letting others into the field. They were thus standing on different sides of the colon project. Their diverse perspectives on how to best finish the clinical trial contributed to a stagnation of the project's progress. Consequently, the decision making process for the colon project was affected:

“One can not treat enough patients... one can not include them because there are counter forces operating... not because of dubious interests, but there are other priorities than this project” (Richard).

Other interests were certainly present and it was also apparent that the introduction process had been affected. However, it turned out to be difficult to resolve the issues of disagreement as it was a sensitive topic for the informants, understandably. They were very vague when attributing the causes:

“Such things are complex, and so many are involved. A lot of things have to be taken into account because people have feelings” (Joe).

The model monopoly paradigm is an interesting perspective for analysing the flawed outcomes from the interplay between power and interests. It tells us that by having a standpoint which others approve of, one is able to make others follow. Being model-strong could help the colon-team win through. However, actors involved in the project did not perceive themselves to have this kind of power:

“There were some conditions at this department which counteracted it (the project). Several factors contributed and made it difficult to keep our focus on prioritizing the project” (Richard).

“If I should be able to manage this, my considerations and priorities should be respected” (Lars).

One of the surgeons expressed dissatisfaction with some perceptions at the department. He was convinced that differing interests made it difficult to cooperate.

“Here, such projects are regarded as belongings to one or few persons and not as a gain for the entire hospital” (Surgeon).

Informants’ understanding of the situation was very consistent. Other interests in the shape of “different priorities” were obstacles for the project. Although not an obstacle for the teaching of skills, but it was definitely bringing the clinical trial to a standstill. Actors may use model-power to convince others of their views and also get through with their viewpoints. The idea that the trial had now been occupying too much time was quite convincing and led to a situation where its position was being questioned.

5.3 Managerial challenges associated with changes

“Directors and managers do not understand the hospitals they are supposed to manage. Today’s managers are lacking a clinical understanding” (Joe).

Although there exists an array of research that supports the fact that changes and new practises will first meet challenges before being gradually adopted into regular practice, there has not been conducted much research on this topic within health care (Sætnan, 1995:83). The research presented in chapter 2 however, suggests that the health care is no except from such challenges. This part of the discussion will give an insight into the leaders’ role in managing such changes.

Change management theory actually suggests a lot of solutions to the problems/challenges that can and often do, arise when changes are introduced. It includes identifying personalities, and relations amongst them. Lewin’s (1951) three phases may still be relevant for identifying relations within the organization before introducing a new practice. Hospitals are complex organizations that usually adopt a strong hierarchical way of organizing the workforce (Shortell & Kaluzny, 2000). This is a fact that should be taken into account when the hospital decides to introduce a new practice. It is not trivial to achieve success and just become more attractive at the health care market if a practice does not align well with existing, traditional practises. Hargreaves (1996) argues that “The lesson may be that improving training is as much a matter of changing culture as of training individuals to be better teachers.”

During the introduction of the procedure and the learning stages, the team from hospital B seemed to experience some hold-ups but the attitude expressed towards laparoscopy was positive from both nurses and surgeons. On the other hand even though a resistance to change was identified, informants did not explicitly express this and they did not seem to show any aversion towards the new practice. As already discussed in 5.1, it was not the *method* of laparoscopic surgery that was found frustrating. The overall perception was that new practices are here to stay. The dissatisfaction lied within how the “management” had arranged for this project to be implemented. As depicted in chapter 4, the word ‘management’ was a frequently mentioned word. However, this referring was not consistent amongst the informants. Some referred to the management of the hospital in general, some

to the section, and some to the management of the department. Anyhow, as one of my informants expressed it neatly:

“One will always blame somebody else when things are not moving in one’s preferred direction”

Anyhow, they were clearly dissatisfied with the role played by the management, and the support received:

“It becomes clear that somewhere in the management one has actively resisted the order to accomplish this project” (Anonymous).

In the course of a change, managers should be the ones who give the directions and coordinate the work. Informants were obviously not satisfied with the way these challenges had been handled. According to Grønhaug et al. (2001), there might be a demand for a new way of organizing the work under such circumstances. In this organization, it was a bit difficult to tell whether and how the staff exerted resistance. Although some hurdles were certainly encountered and these will be discussed further. Some of my informants clearly expressed that leadership and management should have adopted a more active role.

“I have been to several hospitals, but have never experienced such a lack of insights into organizational matters” (Anonymous).

“This hospital is a haunted house!” (Anonymous)

What informants actually meant was that some places are just not ready to handle changes. Both surgeons and nurses believed that the project could have taken shorter time. They stressed that they were not able to include enough patients, this was the main hindrance and that someone should have taken responsibility to get this project through.

For managers to handle work related changes, it is important to be able to visualise the changes to include them in the planning (Grønhaug et al, 2000). For the optimal functioning of a change process, leadership skills on different levels are also necessary (ibid). Whether the nature of the organization is flexible or rigid; knowing the nature of the organization may help predicting the outcome when a new practice is to be introduced. Somewhere, the leadership must have come too short, as one of the informants expressed: “we could certainly have received more backing up”.

Successful implementation of colon laparoscopy

In 2.3, a process theory for identifying different phases in the reaction pattern to a change was described. Of these, the first phases were *denial* and *reaction*. However, in the case of the colon project, none of the informants ever showed signs of such a dramatic reaction to this change being brought about. The trial and error phase was definitely over at the time of the fieldwork. Informants communicated openness and seemed ready for the change. Because this change was not viewed as an ‘alteration’ or ‘destabilisation’ of the current practise, there was no need to bring out any defence mechanisms and exert resistance. Moreover, the changing process (*exploration* phase) itself seemed to be over with. A shift of individuals’ mindsets would indicate that they have adopted the new way of working. Which was the case, indeed. In fact, they had embraced laparoscopic CRC surgery, all of my informants. What was going on could be better described as *refreezing* (Lewin, 1951; Hayes, 2006). An *adaptation* phase (Grønhaug et al, 2001) implies that there are circumstances which actors must actively adapt to, whereas *refreezing* on the other hand indicates more of a settlement. Nevertheless, both concepts describe a return to the previous state; before the change was being introduced.

But this ‘previous state’ was not reached yet. There was a polarity between the interests associated with the trail and the treatment. The informants told me that they have learned this the hard way. One of them explained to me that these two interests are too strong, and at a somatic hospital, it is not easy to work with research:

“I would like to add that it is not effortless to do research and perform quality control of new methods because the main aims are on the services and treatments produced”.

In this phase, new visions and future plans are said to appear (ibid). For many, it was clear what this project had led to and their part in it. However, by examining the story further it seemed that somewhere between *exploration* and *adaptation*, the planning fell too short. The prospective nature of this study puts limits on what aspects of the colon project’s history that can be used to explain this shortcoming. Still, coordination of actors’ interests related to the project *before* leaping onto it could have eased the progress. Somewhere in the decision making process, maybe even before introducing the project, something might have been missed. In hindsight, informants suggested that this process should be reviewed to find out

what could be done better the next time, as Joe told me: “the whole story is pretty sad”. Were all actors that could contribute to the project included in the decision making process for the project? Were all included actors’ viewpoints considered to start with? Another informant also tried to accept what had made it so difficult:

“The surgeons here are very much into research, but at the same time, I can see why they experience difficulties. I think that research is not yet a common feature of this hospital’s agenda and that therefore people do not know how to go about”

For understanding what kinds of challenges a new practice is most likely to experience, there are several approaches. I have here tried to present a few of the most popular ways to examine the tensions raised in an organization when introducing a new and different practice. The issue of implementing a new procedure seems to be a lot more complex than by just looking at Lewin’s three-phase model. But the research presented by Grønhaug et al. (2001) Hayes (2006) further elaborates on where Lewin should fall short. So there is plenty of help for managers who would like to optimize the process of introduction of a new practice.

6. Final remarks

This thesis has shed light on what challenges one may face when introducing new practices in a hospital. Existing research on knowledge, power and change management suggests several challenges: There are boundaries between different kinds of practices that make learning difficult and impede the diffusion of innovations. This boundary can be difficult to detect since it heavily depends on actors' view of the new procedure. Although resistance to a laparoscopy because of avoiding competence destroying was not found, it cannot be excluded due to some methodological limitations of the case study. Furthermore, model monopolists influence an innovation process in a way they might find it convincing. By using model power, they will be able to compel others in a direction that suits their interests. Model-strong actors were able to affect the course of the project with their own interests. Moreover, the way the management arranges for a practice to be implemented will have implications for whether it will succeed. This research suggests that changing a practice is not trivial for various reasons. This is in line with research presented by Sætnan (1995), Carlile (2002), Aanestad (2002), Mork et al. (2006), Robertson (2006) and Mork et al. (2007). However, this research also suggests that the total picture is a lot more complicated.

There are many complex social processes that may be evoked by introducing a new practice. Impeding power relations can become a challenge to overcome and may hinder other ideas/processes by the prioritising of interests. The outcome of these depend upon the already established routines and practises between the different professional groups and within a professional group. As illustrated, interplay of these processes led to a temporary hold-up of the clinical trial for the colon project. Besides the medical and the technical expertise on the surgical procedure itself, organizational skills were as essential for the new practise to be well adopted. According to informants, the scientific part of the project (trial) was in peril. This was because of an orientation towards services production (treatments). One needs to know the organization, and it may provide helpful to reflect on the nature of the organization, on the interests and the existing relations between actors.

Actors' viewpoints and existing social relations are inevitable in understanding these outcomes. This was the motivation for the second research question; to which extent actors shared a common perception of challenges involved when introducing new practices. This

case study shows that the informants widely shared interpretations of these processes. If a new practice is to be resisted, it has to be perceived as competence destroying. However, informants did not perceive laparoscopy as a threat to their already existing competence. They further agreed that power and interests play a part in decision making. Contradicting viewpoints led to a situation where the actors holding model power won. Furthermore, they widely agreed about the role played by the management; someone did not fulfil their duty. This in turn seemed to have affected the actors' motivation and interest for continuing the project.

One step back, two steps forward

Clearly, the introduction of new practices impacts on several aspects of the health care organization and it is likely that numerous other processes also are involved. New treatments and innovative techniques are supposed to increase efficiency and quality in the overall supply of health care services in the long run. To be able to do so, it is important to understand the effects of introducing such practices into hospitals and health care generally. Hospitals are complex organisations with long traditions and a strong hierarchy between the different professionals. Moreover, one needs to consider that when hospitals decide to start a project in order to increase its competitive advantage, it is not trivial to achieve success if this project does not align well with existing, traditional practises. However, my experience was that the introduction of a new practice also depends a lot on the mindset of the individuals involved.

Further research

It is important to keep in mind that this case study is a framework for understanding a piece of reality – this piece was obtained during fieldwork in a limited setting. It is also very likely that the suggested outcomes may not apply in other settings. The aims of this study were to provide some insights into the processes operating in a clinical organization. As there are many unanswered questions, another option could have been to conduct a comparative study of an R&D department and a traditional hospital department to see how a new procedure is received in two different institutions. A comparative approach may help discover differences and similarities in practice which in turn may contribute to further understand of this topic.

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8. Appendixes

Matrix for interview

Interview guide

Informed consent

Interview matrix of themes

Informant: (name)								
Background/ position (experience with surgery)								
Knowledge about colon project								
Position in colon project								
About the transfer of technical competence/skills								
Experience of challenges/ problems:								
Perception about stagnation								
Personal opinion								
now/future								

Intervju guide

Jeg skriver masterprosjekt om innføring av nye medisinske behandlingsmetoder, og hvilke utfordringer det kan medføre når det gjelder organiseringen av arbeidet. Derfor følger jeg colon-prosjektet her på avdelingen og intervjuer noen av dere som er involvert i dette. Jeg vil gjerne vite hvordan det gikk under innføringen av dette prosjektet, både når det gjelder det praktiske og hvilke tanker dere gjorde dere om arbeidssituasjonen.

Fordi jeg tenkte du kunne fortelle meg noe om hvordan det går når teknologi blir innført i klinisk praksis/som ny metode, ville jeg gjerne ha denne samtalen.

Jeg regner med at intervjuet vil vare mellom en halvtime og en time. Først kommer jeg til å spørre litt om din bakgrunn, og så vil jeg gjerne gå over til å snakke litt mer om colon-prosjektet. Det er ikke noen riktige eller gale svar på disse spørsmålene, jeg ser heller etter de tanker du gjør deg om temaet.

Bakgrunn:

Jeg vil begynne med å stille noen spørsmål om din bakgrunn og hvor lenge du har jobbet her

1. Fortell meg kort om din faglige bakgrunn. Har du jobbet som ... lenge?

- Hva gjorde du før du begynte her?
- Hvor lenge du har vært tilknyttet denne avdelingen?

2. Hvilke oppgaver har du ansvaret for her på avdelingen?

- kan du beskrive en typisk arbeidsdag t for deg?
-

Nå går vi over til å prate mer konkret om colon-prosjektet som pågår her på avdelingen.

3. Dette colon-prosjektet, hva er det dette dreier seg om, og hva var hensikten med det?

- Hvordan startet det hele?
- Når hørte du om colon for første gang? Av hvem?
- Hva tenkte du om det da?
- Kjenner du til andre slike innføringer?

4. Hvordan kommuniserte dere med hverandre om dette prosjektet?

- Er det noen du kommuniserer mest/best med? Om hva?
- På tvers av nivåer?
- Hvem hadde mest/minst info? Hvem var det alle spurte?
- Hva sa de andre? (kolleger)

5. Hva forventet du da? Hva er annerledes enn det du forventet?

- Hvordan var det på denne avdelingen før?
- Hvordan tror du de andre involverte reagerte på dette i begynnelsen?

6. Hvordan opplever du denne metoden i forhold til den gamle måten å jobbe på?

- Hvor ligger den største forandringen i ditt arbeid?

- Hvordan har situasjonen under en prosedyre endret seg fra tradisjonell måte?
 - Sammenlignet med din gamle jobb?
 - Hva var utfordrende?
(eksempler)
 - Hvordan tror du dette er for pasienten?
- 7. Om det nevnes utfordringer/noen vanskeligheter; Hvordan har man tatt tak i dem?**
- Hvilke tanker gjør du deg om utfordringer?
- 8. Hvordan skjedde opplæring og integrering? Hvem hadde ansvaret?**
- opplæringen i forhold til denne prosedyren var?
 - integreringen i den nye arbeidsformen har vært?
 - Hvordan har man tatt avgjørelser på tvers av nivåer?
- 9. I hvilken grad føler du at det har blitt tatt hensyn til deg som ansatt/dine ønsker? (yrkesgrupper)**
- Noe som kunne vært annerledes/bedre?
- 10. Hva med muligheter for å evaluere kunnskapsutviklingen underveis?**
- Har noe blitt publisert/dokumentert?
 - Hvor mye har det hatt å si, om det har blitt utført
- 11. (Om du hadde fått bestemme, hadde du innført colon?)**
- hvordan tror du jobben din hadde vært da?
(for de etter colon.p; forventninger/utfordringer kan være mindre?)
- 12. Hvilke tenker du i ettertid (refleksjoner), hvordan virker/hva mener du om nåværende situasjon?**
- sammenlign før og etter situasjonen
- 13. Hva kan du si du har lært ved å få vært med på dette prosjektet?**
- Om håndtering av ”utfordringer”?
 - Hvilket råd ville du gitt til fremtidige helseledere når det gjelder innføringen av nye praksiser?
- 14. Er noe mer du ønsker å tilføye?**

Takk så mye for din tid, det var veldig fint at du kunne stille opp. Er det noe du ønsker å vite om det du har sagt, eller noe du vil forandre på, kan du gjerne kontakte meg igjen.
(Eventuelt noe mer informasjon om hvordan jeg skal bruke det han/hun har sagt hvis ønskelig.)

Forespørsel om deltakelse i forskningsprosjekt

”Hvordan innføring av nye praksiser påvirker arbeidsforholdene i helsevesenet”

Hensikten med intervjuet

Faiza Moghal er masterstudent ved institutt for helseledelse og helseøkonomi, Universitetet i Oslo og ved Intervensjonssenteret, Rikshospitalet. I forbindelse med sitt mastergradsprosjekt skal hun studere utfordringer relatert til innføring av teknologi i helsevesenet, og skal derfor se nærmere på innføringen av laparoskopisk kirurgi (kikkhullskirurgi) på kirurgisk avdeling, på dette sykehuset.

Dette prosjektet går ut på å kartlegge hvordan de ansatte opplever sin arbeidssituasjon, og hva som skjer med organiseringen av arbeidet når en helt ny prosedyre taes i bruk. Kunnskap om hvordan de ansatte i helseorganisasjoner opplever dette vil også kunne være verdifullt ved planlegging av organisering av helsevesenet i fremtiden.

Hvorfor du blir forespurt

For å samle data som belyser dette prosjektet, skal det utføres observasjon, intervju, og dokumentanalyser. Det er derfor hensiktsmessig å forespørre ansatte på den kirurgiske avdelingen på sykehuset om å stille opp til et uforpliktende intervju, og la seg observere.

Konsekvenser for deg

Hvis du sier ja til å delta i prosjektet, betyr det at du kommer til å ha en samtale (ca 1 time) med meg der hvor jeg kommer til å stille noen spørsmål knyttet til din stilling ved avdelingen. Samtalen vil bli tatt opp på bånd. Å stille opp til intervju innebærer ingen ytterligere forpliktelser/ulempes eller fordeler.

Det er ingen direkte risiko ved å delta i studien, men du kan føle det ubehagelig at jeg observerer deg. Det er ikke dine faglige kunnskaper som skal undersøkes, men hvordan innføringen av ny teknologi påvirker organiseringen av arbeidet.

Slik ivaretas informasjonen fra deg

Opplysningene om deg som fremkommer gjennom intervju og observasjon vil behandles konfidensielt. Prosjektansvarlig og to prosjektveiledere vil være de eneste med tilgang til informasjonen fra deg, mens prosjektansvarlig er den eneste personen som vil ha kjennskap til din identitet (se kontaktinformasjon).

Det er frivillig å la seg bli intervjuet. Dersom du velger å ikke stille opp, trenger du ikke å oppgi noen grunn. Du kan når som helst trekke tilbake ditt samtykke, eller velge å få dine opplysninger slettet, uten å oppgi grunn. Hvis du velger å stille opp, har du rett til å få innsyn i hvilken informasjon som blir registrert fra deg. Du har videre rett til å få korrigert eventuelle feil i den informasjonen som blir registrert.

I den endelige masteroppgaven vil det etterstribes å anonymisere datamaterialet, allikevel vil det i enkelte tilfeller være mulig å identifisere enkeltpersoner indirekte på bakgrunn av opplysninger om arbeidssted og stilling. Hvis ønskelig vil de deler av oppgaven som kan identifisere enkeltpersoner gjøres tilgjengelig for gjennomlesning før endelig publisering.

Ved prosjektslutt i september 2007 vil grunnlagsmaterialet for studien anonymiseres, dette innebærer at transkriberte intervju og lydopptak slettes:

Prosjektansvarlig/Mer informasjon:

Hvis du har spørsmål om studien, kan du kontakte prosjektansvarlig:

Faiza Moghal, prosjektansvarlig

Intervensjonsentert

Rikshospitalet

0027 Oslo

Sentralbord: 23 07 00 00

Mobil: 97 96 99 23

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bjornerikmork@gmail.com

SAMTYKKE - INTERVJU

for prosjektet

”Hvordan nye praksiser påvirker arbeidsforholdene i helsevesenet”

Å stille opp til intervju er basert på ditt frivillige, informerte samtykke. Dersom du ønsker informasjon utover det som fremkommer i dette informasjonsskrivet og den muntlige informasjonen du har mottatt/vil få, har du full anledning til å be om dette. Dersom du etter å ha fått den informasjon du synes er nødvendig, sier ja til å delta i studien, må du signere samtykkeerklæringen.

Jeg, _____ (navn med blokkbokstaver), bekrefter at jeg har mottatt skriftlig informasjon om intervjuet, har fått anledning til å innbente den informasjon jeg har hatt behov for, og er villig til å stille opp til intervju og la meg observere.

Signatur _____ Dato _____

(signert av intervjudeltaker)

(datert intervjudeltaker)

- Jeg ønsker å bli gitt mulighet for å lese gjennom de deler av masteroppgaven som kan bidra til å identifisere enkeltpersoner.