RESOLVING A WICKED ISSUE IN A MARKET SETTING
- THE CASE OF COST CONTAINMENT OF PHARMACEUTICALS WITHIN THE SWEDISH HEALTHCARE SYSTEM

Abstract: This study set out to investigate the Swedish pharmaceutical industry’s sentiment of being disproportionally cost contained, by exploring the three question: i) How are pharmaceuticals being cost contained within Swedish healthcare? ii) Are they disproportionally cost contained compared to other costs areas of healthcare? iii) If so, why?

By applying a theoretical framework where the theories of wicked issues are combined and understood in relation to the theories of markets and their practices, three main contributions to the healthcare management field were obtained. Firstly, an increased understanding of why the finding the appropriate level of cost containment is a problematic and complex issue. Secondly, a comprehensive description of where and how cost containment occurs for pharmaceuticals within the Swedish healthcare system. Thirdly, an increased understanding how market actors own actions and interactions are part of both the issue and the solution of establishing the appropriate level of cost containment.

From a theoretical perspective, the contribution is two-folded. First, while traditional theory on wicked issues have focused on searching for solutions of a wicked issue within organizations, the case of finding the appropriate level of cost containment of pharmaceuticals within the Swedish healthcare sector exemplifies, how both the problem and the solution must be found in the interactions among market actors. Lastly, the study also exemplifies a limitation in the model of markets and their practices. As stated in the traditional theory, conflicts and problems are solved within each practice with suitable mechanisms. However, this study shows how those market mechanisms are insufficient and market performativity affected, when several market actors participate in several market practices simultaneously.

Keywords: Healthcare systems, Pharmaceutical markets, Medical Technology, Cost containment, Market practices, Wicked issues
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Authors
Lisa Lindgren, 22071
Max Sihvonen, 22069

22071@student.hhs.se, 070-600 09 09
22069@student.hhs.se, 073-382 65 73

Course Director
Henrik Glimstedt
Associate Professor

Tutor
Hans Kjellberg
Associate Professor

In association with
LIF - The Swedish Association of the Pharmaceutical Industry AB
Karolina Antonov, Head of Strategy
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### ABBREVIATION LIST

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>EMA</td>
<td>The European Medical Agency</td>
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<tr>
<td>LIF</td>
<td>The Swedish Association of the Pharmaceutical Industry</td>
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<td>MPA</td>
<td>The Swedish Medical Product Agency</td>
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<td>OTC</td>
<td>Over the counter</td>
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<td>TLV</td>
<td>The Swedish Dental and Pharmaceutical Benefits Agency</td>
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<tr>
<td>SKL</td>
<td>The Swedish Association of Local Authorities</td>
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<td>SLL</td>
<td>The Stockholm County Council</td>
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1. INTRODUCTION
This chapter aims to set the context of the study by explaining the circumstances of the problem area and describing the historical background. Furthermore, the research purpose, expected contribution, definitions, delimitations and disposition are presented.

1.1 Problem area
Most issues related to healthcare systems are argued to be wicked issues (Vartianinen, 2003). Following the definition made by Clarke and Stewart (2003), wicked issues are problems “for which there is no obvious or easily found solution”, this paper sets out to explore the wicked issue of cost containment of pharmaceuticals and how this issue is attempted to be solved in interactions among market actors within the Swedish healthcare system.

Whereas providing the Swedish citizens with the best possible care is a natural goal for a healthcare system, the market actors involved all have different ideas of how this should be achieved. Not the least is this the case for cost containment of pharmaceuticals, which is characterized by a heated discussion, where several actors on the market try to impose their view and influence the level of cost containment to best suit their opinion and agenda.

Representing the opinion of the pharmaceutical industry - LIF (The Swedish Association of the Pharmaceutical Industry) - is one of these actors, for whom finding a better solution to the cost containment issue is an area of major interest. In line with the nature of wicked issues, the different agendas, opinions and ideas of how a wicked issue should be solved, adds additional complexity and wickedness to an issue (Vartianinen, 2003), especially as the issue in this case has to be solved within a market setting rather than within an organization. Thus, in order for LIF to understand how the issue best can be handled, an understanding of the different standpoints of all other actors have to be obtained. The purpose of this paper is therefor to present the involved market actors role and opinion of where and how the wicked issue should be solved.

In the time of writing this paper, the Swedish healthcare system undergoes significant changes which will have substantial effect on cost containment of pharmaceuticals in coming years, thus this paper also aims to derive recommendations on how LIF, in this process and in interaction with other market actors should – in the best of ways - handle the issue of finding the appropriate level of cost containment of pharmaceuticals.

1.2 Historical background
The Swedish healthcare system has long been considered a front-runner in providing high-quality care at a reasonable price compared to other nations. (Swedish HealthCare, 2015) The foundation of today’s healthcare system was established in the 1950’s to provide - based upon a tax-funded system - cost-to-value-efficient treatments for the Swedish population and prevent individual citizens from suffering high private healthcare costs. (Anell et.al., 2012)

However, the general assumption is that resources in society are limited and therefore cannot satisfy all needs and wishes. (Horwitz, 2008) In Swedish healthcare, this becomes increasingly clear as more
advanced and disease-specific, but also more resource-intensive, medical treatments become available for a growing and aging population. (LEV-project, 2010)

The current Swedish system has - in the last two decades - been the object of intense discussions as it has experienced significant increases in the overall cost for healthcare, increases that cannot be solely explained by an increase in population. (Erixon & Marel, 2011) Many factors come into play, but one, which has been highlighted, is the cost of pharmaceuticals and especially the costs linked to new pharmaceutical-based treatments. (Erixon & Marel, 2011) During the 1990s, costs of pharmaceuticals grew rapidly – with a double-digit percentage annual growth rate - as many “blockbuster” pharmaceuticals were introduced to the market. In order to manage and control the escalating pharmaceutical costs, the Swedish state reformed the system by adding resources to contain pharmaceutical costs. (Anell et al., 2005)

“Some problems are so complex that you have to be highly intelligent and well informed just to be undecided about them.” - Laurence J. Peter

Fottler et al. (1981) describes cost containment within healthcare as “the attainment of optimal operating efficiency within the constraints of providing a high standard of service to patients - i.e., effectiveness.” Today, there is a commonly shared understanding among market actors that some kind of cost containment system is needed to ensure the sustainability of the tax-funded healthcare system. (e.g. Antonov, Alverlind, Laestadius, Interview, 2015) However, finding the appropriate level of cost containment of pharmaceuticals is a difficult task, especially in situations where financial resources are limited. (Mechanic, 1985) On one hand, inadequate cost containment risks irrational spending of tax-incomes. On the other hand, excessive cost containment risks sub-optimizations in the system, where innovations risk to be neglected and system improvements are being missed out. (Fottler et al., 1981) The consequences in both ends are overall costs increases and patients receiving unhealthy and ineffective treatments.

Adding to the complexity, there can be different opinions on optimal levels of cost containment when many actors are involved in finding a solution. (Bibbee & Padrini, 2006) In the attempt to contain costs, actors within national, regional, and local level have in recent years imposed cost containing initiatives including actions towards both in-patient as well as prescription pharmaceuticals. In addition, several new actors e.g. the Swedish Dental and Pharmaceutical Benefits Agency (TLV) and the NT-council have been established to make health economical evaluations and recommendations upon cost containing activities. (Anell et al., 2005; LFN, 2007; Janusinfo, 2015)

The increased attention directed towards evaluation and cost containment of pharmaceuticals has made the pharmaceutical industry react. While the pharmaceutical industry, through LIF, recognizes that reforms were needed to improve cost containment of pharmaceuticals in the past, their viewpoint is that the cost containment structures on the pharmaceutical markets have become disproportionate compared to the actual cost of pharmaceuticals as well as in relation to other cost areas within the healthcare system e.g. personnel and medical technology. According to LIF, the current form of cost containment rather creates sub-optimizations and additional costs for the healthcare sector as a whole. (Antonov, Interview) Also, pharmaceutical companies experience an increasing price pressure as well as prolonged and more complex procedures for introducing new pharmaceuticals to the Swedish market. Some pharmaceutical companies even state it is no longer an obvious decision to launch in Sweden. The costs are simply becoming too high to compensate for potential gains. (Antonov, Interview)
The issue of balancing cost containment in healthcare has been widely studied (e.g. Berger, 2006), additionally plenty of research has studied the market structure within the Swedish healthcare sector and on the pharmaceutical market. (e.g. Helgesson & Sjögren, 2007) However, no research has yet been conducted to analyze how actor’s activity of solving a wicked issue is happening in a market setting. If finding the appropriate level of cost containment can be seen as a wicked issue, an analysis of how market actors, through their market practices, contribute to shape the current market structure and thereby the structure of cost containment, can help explain the situation the pharmaceutical industry is experiencing.

1.3 Research purpose
Given the pharmaceutical industry’s sentiment of being disproportionately cost contained, this paper aims to study how pharmaceuticals are cost contained within Swedish healthcare and whether pharmaceuticals are being treated differently compared to other cost areas within the healthcare system. Also, the study aims to clarify how disproportional differences in costs containment between areas of healthcare can be explained. From the derived findings, suggested recommendations are presented based on how involved market actors can act and interact in order to handle the issue.

1.3.1 Research questions
• How are pharmaceuticals being cost contained within Swedish healthcare?
• Are they disproportionally cost contained compared to other costs areas of healthcare?
• If so, why?

1.4 Expected Contribution
1.4.1 Theoretical contribution
By applying the conceptual model of markets and their practices to a market characterized by a wicked issue, the study aims to explore the circumstances around a wicked issue being resolved in a market setting.

The theoretical research contribution is aimed to be two-folded. Firstly, the theory of markets and their practices is used to describe how the cost containment processes and systems of today are created by the activities and interaction among market actors. It adds valuable knowledge to the theory of wicked issues as it describes where and how the actors today, in ongoing processes, attempt to solve wicked issues in a market setting. Secondly, by combining the two theories, our study aims to describe how the wicked issue becomes even more complex when it cannot be handled by one single organization but when both the issue and the solution is found in the interactions among market actors.

1.4.2 Practical contribution
For LIF and the involved market actors, this study aims to provide support in understanding the complexity surrounding cost containment by describing the different actors roles and opinions. As problem-solving in a situation characterized by wickedness differs greatly from that of a tame issue, this study furthermore aims to provide concrete recommendation of how the pharmaceutical industry and other market actors can act to improve the current market performativity and get closer to finding the appropriate level of cost containment for pharmaceuticals.
1.5 Definitions

1.5.1 Cost containment
In order to broaden the definition of cost containment to facilitate a consistency with the macro environment and several stakeholder within the healthcare field the following definition for the purpose of the study is proposed: *any set of policies or measures intended to ensure the best possible healthcare for patients within the constraints set to pursue that task*. Thus, with this definition, finding the appropriate level of cost containment means finding the balance where any additional resource invested in cost containment adds additional value to the healthcare system as a whole.

However, it has to be noticed that the meaning of “value” or the definition of “the best possible care” are subjective matters. As will be seen in below analysis, this lack of unity in this regard among markets actors is a fundamental factor of the wickedness to the issue.

1.5.2 Cost areas of healthcare
This study defines the “cost areas of healthcare” as all healthcare expenses on a national, regional and local level that are funded by tax-incomes. Within the scope of this study, the costs items are clustered into the overall cost categories of pharmaceuticals, medical technology, personnel, facilities and administrative costs. Mainly, the study will refer to the cost containment of pharmaceuticals while additional cost containing activities will be referred to as cost containments of “other cost areas within healthcare”.

1.5.3 Categorization of pharmaceuticals
The level of and the nature of the cost containment activities, differ depending on what kind of category of pharmaceuticals is being contained. Within the scope of this study, pharmaceuticals are divided into three categories; OTC, prescription and in-patient. An in-depth description of the categories can be found in the empirical findings, however in short, OTC refers to pharmaceuticals purchased over the counter, normally in a pharmacy by a private person without the need of a prescription. Prescription based refers to pharmaceuticals prescribed by physician and purchased by a private person in a pharmacy. In-patient refers to pharmaceuticals prescribed and provided by a caregiver within the boundaries of a hospital or another care-providing facility.

1.6 Delimitations
This study describes how and where market actors are attempting to solve the issue of finding the appropriate level of cost containment of pharmaceuticals within the Swedish healthcare system. Given the size of the Swedish pharmaceutical market and the complexity of the healthcare system as well as time and space limitations of this study, several delimitations were made to provide suitable boundaries for a study designed as a case study.

*Firstly*, cost containment within the respective counties can vary. For the purpose of this study, the Stockholm county council (SLL) was chosen to exemplify the structure and perspective on cost containment of pharmaceuticals within a county. However, it has to be noticed that SLL cannot necessarily be seen as representational for all counties. Correspondingly, Karolinska University Hospital was chosen to exemplify the role of the hospitals. *Secondly*, varieties exist in cost containment procedures for the respective pharmaceutical categories: OTC, in-patient and prescription based. Though overall conclusions can be drawn to all three pharmaceutical categories, in-patient pharmaceuticals were chosen as basis of the analyses as it offered the best basis for comparison. *Thirdly*, only the market actors that this study found to be most relevant and influential to the market...
structure were included in the study. Several additional organizations, institutes and actors exists and acts within the boundaries of the Swedish healthcare system, however their impact on the cost containment was considered to be less influential. Finally, the question of whether pharmaceuticals are disproportionately cost contained in comparison to other areas of healthcare is answered by comparing the structure of cost containment between pharmaceuticals and medical technology. While other cost areas such as personnel and facilities are identified, they are delimited from the analysis, as e.g. legal differences and differences in the characteristics of the resource was deemed too diverse for a viable comparison.

1.7 Disposition
The introduction chapter is followed by a literature review and the selection of a theoretical framework in Chapter two. The chapter discusses the literature streams of problem-solving as well as the theory of markets and presents a theoretical framework based on the theory of wicked issues and markets and their practices. Chapter three presents the methodology used to approach this study. In Chapter four, the empirical findings of the study are presented followed by an analysis connecting the theory to the study in Chapter five. Finally, Chapter six presents the conclusions and recommendations while Chapter seven discusses the study’s contribution, implications and limitations as well as suggestions for future research.
2. THEORY AND LITERATURE REVIEW

This chapter presents a review of the two research streams that lay as a basis for this study: theories of problem-solving as well as the theories of markets and their practices. The purpose of the literature reviews is to support and expand upon the background chapter by a reflective and evaluative account of previous research in the respective fields. This chapter is divided into three sections. Firstly, a literature stream of the problem-solving processes is conducted. Focusing on the “Dilemmas in a General Theory of Planning” by Rittel and Webber, the aim is to illustrate how scholars over the years have moved from a rational-technical and ‘engineering’ approach to an understanding that complex situations - such as decisions regarding healthcare cost containment – can be diagnosed as wicked problems (referred to as wicked issues in this study) and thus, need a different solving approach. The second section aims at scholars and research streams within the field of theory of markets. The focal theory of “On the nature of markets and their practices” by Kjellberg and Helgesson is further described as it, in contrast to e.g. neoclassical scholars take into account the market actors involvement in the ongoing shaping of the market. The third section describes the study’s theoretical framework.

2.1 Literature stream – Problem-solving processes

The rational-technical and ‘engineering’ approach influenced by the industrial age thinking, views problem-solving as a rational and cost efficiency process. It became the guiding idea for e.g. civil engineering and scientific management, in tasks where those who had the technical knowledge could find consensus around the root causes of the problem and thus the solution. (Rittel & Webber, 1973: J Smith; 2012) Soon, the idea of rational policy analysis techniques developed into a ranch of models e.g. neo-classical cost-benefit analysis, ‘satisficing’ models (Simon, 1957), and the systematic ‘policy science’ analytics (Lasswell, 1956), to address also more complex issues. In the modern-classical models still used today, the idea of a problem-solving process are structured as a “top down process, working from the problem to the solution.” (Conklin, 2006) Conklin and Weil (2003) describe this as the “Waterfall model”, where a common perception is that the more complex the problem is, the more important it is to follow this orderly flow.

Over the years, the critique towards the applicability of the rational approach to complex issues of e.g. social policy and urban planning has increased. As the model is funded upon the possibility that
problems are definable, separable and solutions are findable. (Head, 2008) However, in reality one of the most intractable problems of problem-solving is defining the problem itself. (Rittel and Webber, 1973) Therefore, it is argued that such a viewpoint is unattainable in complex planning. Critics at the time argued these modes of analysis promoted approaches that contributed to, rather than solved, complex problems (Tribe 1972; Sen 1977).

The wicked issues of complex situations. In fact, most projects of today have a significant complex “wicked” component. (Conklin, 2006) The term wicked issues (wicked problems) was first brought up in literature by C. West Churchman (1967), basing the idea on Rittel thoughts, he referred to a class of social system problems which were ill-formulated, contained confusing information, involved many actors with conflicting values, and had ramifications in the whole system which were thoroughly confusing. The adjective "wicked" describes the mischievous and even evil qualities of these problems, where the proposed "solutions" often turn out to be worse than the symptoms. (Churchman, 1967)

In 1973, Rittel and Webber highlight the need for policy- and decision-makers to carefully develop decision tools based on the type of problems they meet. By formulating a comparison between “tame” and “wicked”, they argued the rational-technical and ‘engineering’ approach is applicable only to “tame” problems.

Rittel and Webber formulated 10 characteristics of a wicked issue

1. There is no definitive formulation of a wicked issue. It is not possible to write a well-defined statement of the problem, as can be done with a tame problem.

2. Wicked issues have no stopping rule. You can tell when you have reached a solution with a tame problem. With a wicked issue, the search for solutions never stops.

3. Solutions to wicked issues are not true or false, but better or worse. Tame problems have solutions that can be objectively evaluated as right or wrong. Choosing a solution to a wicked issue is largely a matter of judgment.

4. There is no immediate and no ultimate test of a solution to a wicked issue. It’s possible to determine right away if a solution to a tame problem is working. But solutions to wicked issues generate unexpected consequences over time, making it difficult to measure their effectiveness.

5. Every solution to a wicked issue is a “one-shot” operation; because there is no opportunity to learn by trial and error, every attempt counts significantly. Solutions to tame problems can be easily tried and abandoned. With wicked issues, every implemented solution has consequences that cannot be undone.

6. Wicked issues do not have an exhaustively describable set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan. Tame problems come with a limited set of potential solutions, by contrast.

7. Every wicked issue is essentially unique. A tame problem belongs to a class of similar problems that are all solved in the same way. A wicked issue is substantially without precedent; experience does not help you address it.

8. Every wicked issue can be considered to be a symptom of another problem. While a tame problem is self-contained, a wicked issue is entwined with other problems. However, those problems don’t have one root cause.

9. The existence of a discrepancy representing a wicked issue can be explained in numerous ways. A wicked issue involves many stakeholders, who all will have different ideas about what the problem really is and what its causes are.

10. The planner has no right to be wrong. Problem solvers dealing with a wicked issue are held liable for the consequences of any actions they take, because those actions will have such a large impact and are hard to justify.
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Thus, it becomes clear that in complex situations, such as governmental policy and planning, a purely scientific-rational approach cannot be applied. Smith (2012) argues that scientific approaches to solving problems of social policy are bound to fail because of the nature of such problems. Many scholars have further elaborated on the features of such problems, while explaining the difficulties within areas such as urban planning, social policy, and environmental and natural resources policy. (Allen & Gould 1986, Freeman 2000, Kepkay 2002, Campbell 2003, Van Bueren et al 2003, Salwasser 2004, Conklin 2006)

Further, Brian W Head (2008) argues that complex situations are per se not wicked issues as “there are many complex economic and social phenomena which are difficult to estimate precisely, but which are not thereby wicked. Likewise, mere disagreement among stakeholders does not make a problem wicked, but when serious disagreements are combined with complexity and uncertainty we have crossed a threshold.”

Conklin (2006) states that a wicked issue becomes more difficult when accompanied by a social complexity, defined as “a function of the number and diversity of players who are involved in a project. The more parties involved in collaboration, the more socially complex it is. The more different those parties are, the more socially complex.” In market situations this social complexity goes beyond diversity of individual and disciplines and becomes even more complex when these players represent different organizations with different functions, charters, goals and management teams. Conklin notes that this social complexity makes wicked issues even more wicked. Moreover, he states that the problem with social complexity is that all stakeholders are confident that their version of the problem is correct and other stakeholders are wrong and tend to seek fault in someone else, making problems personal. Conklin continues by saying that people are equipped only to solve tame problems and that wicked issues sneak up on us and create chaos. Without understanding the cause, there is finger-pointing instead of learning. Conklin concludes that these reactions are not due to incompetence, poor management, or any human failing, just the nature of wicked issues.

In 2007 and later in 2012, Kelly Levin, Benjamin Cashore, Graeme Auld and Steven Bernstein further elaborated on wicked issues and created the term “super wicked issues”. While a wicked issue relate to the problem itself, the super wicked issue relate to the agent trying to solve it. Super wicked issues comprise four key features i) time is running out, ii) those who cause the problem also seek to provide a solution, iii) the central authority needed to address the problem is weak or non-existent and iv) irrational discounting occurs that pushes responses into the future.
Solving the wicked issue. Solving a wicked issue is far from an easy ten-step process. (Fraser, 2009) In fact, wicked issues can per definition not be solved. (Camillus, 2008) However, involved actors can be better or worse at handling them, and the first step is to recognize its nature. (Conklin, 2006) Conklin states: “There is a tendency to treat all problems as tame, perhaps because tame problems are easier to solve, reinforced by the lack of understanding about wicked issue dynamics and the tools and approach they require.” Secondly, Conklin notes that in order to handle issues of wickedness and social complexity one must create “shared understanding about the problem, and shared commitment to the possible solutions” is needed.

However, it can be discussed how such a shared commitment should be achieved. If the solution is to be found within an organization, traditional organizational theory has provided tools, such as e.g. organization culture, hierarchies or open communication. However, when a solution has to be found in a market setting, other tools are more suitable e.g. brand recognition or product knowledge. Further, adding the dimension that markets are constantly changing, additional tools will be needed to solve the wicked issue in a market setting.

The phenomena of wicked issues has also been used in business management literature, where Camillus (2008) argued that “companies tend to ignore one complication along the way: They cannot develop models of the increasingly complex environment in which they operate. As a result, contemporary strategic-planning processes do not help enterprises cope with the big problems they face.” Rather, organizations should handle wicked issues by i) involving stakeholders, documenting opinions and communicating, ii) defining the corporate identity, iii) focusing on action and iv) adopting a “feed-forward” orientation.

When it comes to healthcare systems, Fraser (2009) noted that many wicked issues within the healthcare system can be handled better by following the principles of i) looking at the problem holistically ii) understanding the motivations and needs of all stakeholders iii) collaborating with the broader set of system stakeholders iv) exploring the broadest set of possibilities v) thinking about the solution as a system of strategies and activities vi) acting: start now and evolve to a better future state.

It should be noted, that in the process of trying to solve a wicked issue in a market setting such as a healthcare system, there is a risk of certain solutions being off limits. For instance, a higher collaboration on the price setting of pharmaceuticals among companies might help to handle the wicked issue, but is not allowed, as it would be classed as a cartel and not permitted under current competition laws.

In order to understand how and where the wicked issue can be solved within the Swedish healthcare system, a model that adequately depicts the market is needed. In the following literature stream, this study will try to understand markets by describing a transition of the theory of markets from the neoclassic perspective and the idea of market places as fixed, with fixed institutions and a fixed set of solutions to a perspective where markets are seen as shaped by its actors in an ongoing process of practices.
2.2 Literature stream – Shaping markets and market practices

This literature stream elaborates on the different aspects of markets, such as their structure, function and process of becoming. (Harrison & Kjellberg, 2014) While the research field on the theory of markets is spread over several different academic disciplines (Diaz Ruiz, 2012), this presented stream aims to contrast and visualize a transition from the economical viewpoint, where markets are seen as fixed structural contexts where only decision-making agents have the ability to change the structure, to the markets as practices viewpoint, where markets are rather characterized as enacted environments in which market actors not only act in but also take part in shaping it.

The neoclassical and institutional economics approach - rational decisions and humanly devised institutions shape markets. The neoclassical economics view traditionally disregards any social interaction in favor of rational behavior and therefore sees markets as facilitators for exchange where supply and demand dictates the price of a product or service. (Lie, 1997) The institutional economic is characterized by a quantitative view focuses on measurable factors and the societal frameworks that humans operate in. Through development, institutions or market design, these frameworks can be improved to support efficient exchange (North, 1990; Loasby, 1999; Roth, 2007). Both presented approaches have generally received criticism, as it is found to be inadequate in predicating market structure due to its inability to account for human deference from rational behavior. (Collander, 2010)

The Economic sociology approach – how social mechanisms influence markets. In contrast to the neoclassical and institutional economic approach, economic sociology understands markets to be shaped by social mechanisms e.g. power, norms, and networks (Fligstein & Dauter, 2007). Regarding the sociology of markets, Fourcade (2007) identified three different streams i) Network Analysis - interested in interactive mechanisms that stabilize markets e.g., Granovetter, 1985, ii) Field analysis - observing that subjective agency yields to market conventions e.g., Fligstein, 2001 and iii) Performativity - exploring how technology, artifacts, and calculative devices shape markets e.g., Callon, 1998.

Performativity practice and the markets as practice approach. Deriving from the ideas on performativity and how ideas about market mechanisms take part in shaping markets, scholars directed their focus towards market practices. Practices are conceived as arrays of human activity centralized around shared practical understandings. Market practices have the ability to highlight the interaction among a large number of market actors through concrete mundane actions, and calculative devices. (Callon & Muniesa, 2005; Muniesa, Millo & Callon, 2007)

For the purpose of this study, depicting the market structure through its practices seems fitting as the pharmaceutical market within the Swedish healthcare system is characterized by interaction among market actors rather than a dominating institution setting the rules.

In 2007, Kjellberg & Helgesson presented a conceptual model of markets as constituted by practice. Drawing on sociological research on the performativity of market theories (e.g. Callon, 1998), the theory on the performativity of markets argues that market actors do not only act within their environment but also shape markets with their everyday practices, and thus defines market practice as “all activities that contribute to constitute markets”.

Kjellberg & Helgessons conceptual model of markets as the ongoing results of three interlinked types of practices

1. **Exchange practices serving to realize economic exchange.** Include everything that relate to consummation of individual economic exchanges. On the one hand, it includes specific economic exchanges and on the other it includes activities such as advertising campaigns, organizing the distribution of goods or product testing.

2. **Representational practices serving to depict markets and/or how it work.** This includes the gathering and analysis of data and statistics e.g. for use within a company or for journalists to report on the state of the market.

3. **Normalizing practices serving to establish normative objectives.** These practices establish guidelines on how a market should be shaped. In terms of economic markets, these practices can be reforms by authorities, best practices in production industries, rules of marketing and competition or voluntary norms and standards.

Further on, Kjellberg & Helgesson employ the concept of translations, the notion of how activities lead to reproduction in another form, transformation into something else.
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The three market practices can be connected to account for a total of six links

1. Normalizing → Exchange: Rules & tools. The underlying norms are brought to bear through their translation into rules or tools. When rules or practices are put in place, they most commonly have the aim of altering current market behavior. Unless they fail, they will have an impact on exchange practices.

2. Representational → Exchange: Results. Represents any feedback through which actors engaging in exchange, take attributes or results of previous exchanges into account, affecting the quantity, nature preferences of any future transactions.

3. Representational → Normalizing: Descriptions. Efforts to establish norms depend on images of the situation that the norms are intended to regulate. Representations of markets and their actors as well as the actors’ behavior are thus determinants of normalizing practices.

4. Exchange → Normalizing: Interests. Depending on the outcome of the current exchange practices, actors are motivated to influence the executors of normalizing practices to keep or change the rules.

5. Exchange → Representational: Measurements. The content of representational practice is in part determined by exchange practices as market actors performing exchange practices are also represented in representational practices. Thus, there exists a circular sequence of impacts, where e.g. estimations of market size, market share etc. guides future transactions.

6. Normalizing → Representational: Measures and methods of measurements. Changing norm can affect the method of representation in the sense that it establishes which set of measures and methods of assessment that are employed to represent data, e.g. best practices of metrics.

Kjellberg & Helgesson conclude that markets are constituted by on-going processes of these translations, linking exchange, representational and normalizing practices into semi-cyclical and reversible chains that intersect and interfere with each other. Several actors are involved in the process of translation between market practices (e.g. producers, consumers, legislators etc.). Conceiving markets as constituted by practices allows for an analysis on how different forms of market knowledge and actions contribute to the structure of a market. Following the conceptual model, several additional studies on the different practices have been conducted (e.g. Holm & Nielsen, 2007; Andersson et.al. 2008). Nenonen and Storbacka (2010) argue, that the effectiveness of a business model in value co-creation is defined by the internal configurational fit between all business model elements and the external configurational fit between provider’s and customers’ business models.

Kjellberg and Helgesson (2010) further describe how ongoing production of markets involves political action and how these take part in shaping markets. Within the three practices, political actions can be used to solve conflicts. Conflicts within normalizing practice are often solved through public debate or political coalitions, while conflicts within exchange practices can be solved through competition where actors (buyers) chose the best option and representational conflicts are solved through scientific evidence connecting claims to observations. However, in markets with a more complex nature, tools that are more sophisticated might be needed.
2.3 Theoretical framework

The choice of the concept of wicked issues as part of the framework for this study is based on the hypothesis that most serious healthcare problems are wicked issues. However, classifying the struggle of finding an appropriate balance of cost containment as a wicked issue will not provide the tools to understand how to resolve it. By combining wicked issues with the conceptual model of markets and their practices, this study seeks to understand cost containment of pharmaceuticals through a two-folded framework, by studying i) the consequences of attempting to solve wicked issues in market settings and ii) the settings in which wicked issues crop up in the formation of markets.

Consequences of seeking to solve wicked issues in market settings. This first part of the theoretical framework seeks to describe how the theory of markets and their practices adds value to the theory of wicked issues. Firstly, in the theory of wicked issues, it is commonly known that the problem often lies in the market or in the interaction among various actors, however it is often suggested that the solution should be achieved through actions within the respective organization. In the case of balancing cost containment of pharmaceuticals, applying the theory of markets and their practices implies that both the problem and the solution needs to be found in the interaction between the actors. In such a case, managing the wicked issue has to be handled within the setting of the markets and not within the respective organizations.

Secondly, the main objective with the theory of a wicked issue is not to determine if a given problem is wicked or not, more importantly is to create some sense of what contributes to the “wickedness” of a problem. (Conklin, 2006) Through the lenses of Kjellberg & Helgesson’s (2007) conceptual model of markets and their practices, examining the sources of the wickedness becomes possible. This allows the study to not only analyze the exchange between buyer and seller organizations, but to broaden the scope to see how other market actors within normalizing and representational practices also take part in this process. The addition of the theory of markets and their practice to analyze wicked issues enables a better and more detailed understanding of where and how the issue occurs and also where and how within the market the issues can be handled.

Thirdly, in the first literature stream, it was argued that certain solutions of wicked issues are off limit when they are tried to be solved in a market setting. However, by acting on the market, actors also take part in re-shaping the market itself and through that process, why more new solutions can be found. Thus, by analyzing wicked issues from a market perspective, more potential solutions might appear to market actors than was thought of by first glance.

When wicked issues crop up in the formation of markets. The second part of the framework seeks to describe how the theory of wicked issues adds value to the theory of markets and their practices. Firstly, in the findings presented by Kjellberg & Helgesson (2010), a number of mechanisms are presented on how to solve conflicts and problems through political actions. However, the proposed mechanisms are contained to each separate market practice and are therefore, from the perspective of wicked issue, only equipped to handle tame problems. Wicked issues are more complex and lie outside of the boundaries of one practice, affecting all three practices simultaneously. Therefore new ideas are needed on how to find solution in the interaction between market actors.

Secondly, by including the idea of wicked issues into the theory of markets and their practices, a better assessment of market performativity is possible. Nenonen and Storbacka (2010) argue, that the effectiveness of a business model is defined by the internal and external configurational fit of a market actor to the market. Deriving from that idea of organizational fit, the market performativity for this study can be defined as how well the translations between representational, exchange and normalizing
practices are flowing in common agreement among the market actors. In markets with high performativity, translations are smooth, aligned and the practices produce results, which the other practices find useful. In the case of wicked issues in a market setting, it can be argued that markets suffer from low performativity where tensions and conflicts disturb the flow and create inconsistencies, confusion and disruptions. In the process of analyzing the appropriate level of cost containment, the performativity and its disruptions need to be measured in the market.

Theoretical framework in relation to the research questions. As stated in the introduction, the research questions aimed to understand are i) how are pharmaceuticals being cost contained within Swedish healthcare? ii) are they disproportionately cost contained compared to other costs areas of healthcare? iii) if so, why? In the light of the presented theoretical framework, the study seeks the answers by analyzing the general question of “How is a wicked issue resolved in a market setting?”, by exemplifying through a case study of cost containment of pharmaceuticals in the Swedish healthcare system. In the next chapters, the analysis aims to explore the solutions to this question.
3. METHODOLOGY

The purpose of the following chapter is to explain how this study has been conducted. In described order, the chapter motivates the chosen research approach, design, unit of analysis and gathering of empirical data. The chapter ends with a discussion about research quality.

3.1 Research Approach

3.1.1 Inductive, deductive or abductive approach
A deductive approach assumes that a hypothesis is built on previously existing theory and evaluates its validity though empirical data. An inductive approach on the other hand starts in the empirical findings in order to generate new theories. (Bell, 2006) In this study, an abductive approach has been used, which contains elements of both the inductive and deductive approach. An abductive approach is appropriate when a study aims to understand underlying patterns of a phenomenon by adjusting the theory and empirical data to the findings during the process of the study. (Alvesson & Sköldberg, 1994) The abductive approach in this study, builds on one hand on the existing theory of wicked problems and markets and their practices. It investigates how these theories are applicable to explain and understand what factors influence different levels of cost containment within the Swedish healthcare system. On the other hand, developments and alterations are made in the theoretical framework in order to suit the complexity of handling wicked issues in a market setting.

3.1.2 Qualitative or quantitative method
This study has been designed in accordance with a qualitative method, as it is considered appropriate in connection with an abductive approach (Alvesson & Sköldberg, 1994). “The purpose of a qualitative research study is to examine phenomenon that impact on the lived reality of individuals or groups in particular cultural or social contexts”. (Mills & Birks, 2014) Thus, in order to reach a deeper understanding of the Swedish healthcare system and its complexity, a qualitative method is found appropriate. (Yin, 2009)

A qualitative method aims to aid in the development of theories rather than in the testing of existing theory (Patton, 2001), and may thus, through qualitative interviews, provide in-depth understanding of reality (Andersen, 1998). Simultaneously, Merriam (1988) acknowledges the importance of physical presence to be able to gather enough detailed qualitative data. As Marshall (1981) describes it, “it is important for me to have been there. I can’t imagine doing an adequate analysis of data if I have not participated in collecting it”. This is especially important while trying to understand such a complex environment as a healthcare system. To meet the data gathering requirements, 16 interviews have been conducted in this study in an attempt to fully understand the system and to capture the varieties in opinions amongst the market actors.

3.2 Research purpose
As the idea of studying how wicked issues are resolved in a market setting to a large extent is an unexplored area of research, an exploratory research purpose is therefor deemed suitable. (Yin, 2009) The study aims to explain how attempts made by market actors to solve the issue of finding the appropriate level of cost containment shapes the market structure and thereby give way for future research in the area.
3.3 Research design

This study has been conducted within the frame of a graduate level research thesis. The research design, namely a case study, has been set by the program management prior to the study. A case study is defined as an intensive study of an individual unit of interest (Stake, 1995), with a focus on the developmental factors of that unit (Flyvbjerg, 2011). Case study is an exploratory form of inquiry, providing an in-depth picture of the unit of study, which can be a person, group, organization or social situation. (Kamins & Stewart, 1993) In general, a case study is most suitable for the purpose of answering questions about “how” or “why” a contemporary phenomenon occurs, or in situations where the researcher has little or no control over the phenomenon of interest. (Yin, 2003) As this study sets out to understand why the cost containment differs between different cost areas of healthcare within the Swedish healthcare system and how the market actors try to handle the issue of finding the appropriate level of cost containment, a case study is considered to be suitable. Thus, the research questions, approach and purpose have been chosen to fit the case study design. In addition, this study investigated mainly contemporary events as opposed to historical events, in line with the use of a case study design (Yin, 2009). Finally, as the thesis is written in the scope of a graduate level research thesis, time and resource restraints have limited the design to a single case study.

3.4 Choice of case study

The case company along with the phenomenon studied below were proposed to the authors by their tutors. Upon choosing LIF and after conducting a literature review of the relevant research fields, the research questions were developed and tailored to fit the conditions of a case study and the environment LIF is acting within. In order to answer the research question, a comparison had to be made between cost containment of pharmaceutical on one hand and another cost area within the healthcare system. The reason for choosing medtech in this comparison was due to the relative similarity between the two areas compared to other cost area such as personnel, facilities or administrative costs.

Even though studying the healthcare system in Sweden and LIF was given, a similar study could have been conducted within any healthcare system internationally as many healthcare systems fulfill the characteristic of wicked issues trying to be handled in a market setting. However, the result and underlying explanations to the situation in this particular setting will most likely differ from a similar study carried out in another healthcare system. The choice of case company was deemed fitting, since the primary purpose of this study is not to draw general conclusions about cost containment, but rather to offer the market actors involved in this setting an explanation and understanding of the specific issue as well as recommendations on how to manage it.

3.5 Qualitative and quantitative data collection

3.5.1 Primary data

Burgess (1982) explains how interviews are important “for researchers to probe deeply, uncover new clues, open up new dimensions of a problem and to secure valid, accurate, inclusive accounts that are based on personal experience”. The purpose of the study is to gain a deeper understanding regarding how market actors try to solve the issue of finding an appropriate level of cost containment, in-depth interviews with market actors were found suitable. It was of importance that these interviews covered a range of organizations to capture the complexity and broadness of the issue.
3.5.2 Interviews and choice of respondents
Too few interviews make any generalization difficult, while too many can make the data difficult to analyze (Andersen, 2009). With regards to this, 16 interviews were conducted. As the aim with this study is to understand how the different market actors view upon and influence how and where the issue of cost containment is solved it was of importance to interview representatives from all of the most relevant market actors. Firstly, a mapping of the market actors was conducted in order to understand and find the most relevant organizations. Secondly, as the relevant actors to interview were unknown, a network sampling method was used that consisted of both screening and salting. (Lee, 2008) The first way was to screen for respondents of interest during the interview, and the second approach was to acquire respondents through official records or documents. Through this, a sufficient research basis was established. However, if the study had not been limited by the context in which it was performed, i.e. as a graduate level research thesis, more interviews could have been performed to increase the generalizability of the results.

3.5.3 Structure of interviews
The interviews took place between January 23rd and May 6th of 2015. All 16 interviews were semi-structured, meaning that they started with a set of predetermined questions, but were open-ended, in-depth interviews giving the interviewees the opportunity to provide their own perspective, deviate from the questions and elaborate on their thinking (Andersen, 2009). In addition, it was important to provide enough time during the interviews in order to receive in-depth answers to capture the nuances in the opinions and perspectives, why the length of the interviews were between 45 to 90 minutes. All interviews where recorded and afterwards transcribed in order to fully capture the different opinions and nuances.

3.5.4 Secondary data
As “multiple methods of data generation can be used in qualitative research, creating sufficient depth in the data set to dimensionalize a phenomenon in a way that analyzing interview data alone would be unable to achieve”, (Birks & Mills, 2014) this study further deepened the analysis by grey literature with a quantitative nature e.g. state reports, statistics, budgets, websites, policy and procedures reports have been analyzed to support the conducted interviews. (Mills & Birks, 2014)

For the purpose of the study, a media search via Swedish Retriever (Retriever, Homepage) was also conducted on May 17th of 2015. The listed keywords in the empirical findings were searched for in Swedish print media during the time frame of a year (2014-01-01 – 2014-12-21). All mentions of the keywords were delimited to the header and preamble (rather than the whole articles) to ensure relevance.

3.6 Structure and Analysis of Empirical Data
The empirical data is structured into two sections: The first section aims to depicture the current market structure of cost containment within Swedish healthcare as it is today. The aim is to offer an understanding of the complexity within the system. The next section maps out relevant market actors and their role and view on cost containment. Describing the market actors and their opinions separately was argued to be important as it captures the nuances and differences within the market. The empirical structure furthermore acts as the foundation for the subsequent analysis, as the market actors ties into the conceptual model of markets and their practices.
3.7 Research Quality
The notion of determining the research quality by evaluating the validity and reliability (Bryman & Bell, 2007) rests on the foundation that a form of stability can be appointed to the object of the study. However, as the analyzed market is characterized by an ongoing, ever-changing process with no fixed point to attach the study to, a constant changeability lies in the nature of the market. Therefore, there cannot be the same demand on the quality of information. Rather, the situation can only be studied. For the purpose of this case research study, it was therefore deemed to be more important to create useful knowledge rather than valid and reliable knowledge.
4. EMPIRICAL FINDINGS

This chapter aims to present the primary and secondary data gathered. The chapter is structured into two sections. Firstly, an overview of the Swedish healthcare system is offered. Secondly, a mapping of the most important market actors and their role and opinion of cost containment is presented.

4.1 The Swedish healthcare system

The Swedish healthcare system is organized into three different levels: national, regional, and local. The county councils (regional) together with the Swedish state form the basis of the healthcare system. (Hjortsberg & Ghatnekar, 2001)

- At the national level, there are eight central administrative agencies related to healthcare, where the leading organization is The Ministry of Health and Social Affairs (Socialdepartementet) whom are planning and steering healthcare policy and allocates financial assistance on special occasions. (Vartiainen, 2003)
- At the regional level, there are 21 independent regional county councils in Sweden, responsible for both the primary and hospital care. All together there are nine regional hospitals, 70 district county hospitals, and approximately 950 health centers. (Vartiainen, 2003)
- At the local level, the healthcare responsibility for municipalities is limited to e.g. school healthcare, environmental hygiene, care of the elderly, disabled, and long-term psychiatric patients. (Vartiainen, 2003)

Two main issues with this structure are currently widely discussed. Firstly, the issue of silo-budgeting, where county councils are often burdened with the investment costs though the benefits and savings occurs at a municipality or national level. This naturally decreases the incentive for counties to make long-term investments. (Blixt, Interview) Secondly, the issue of unequal healthcare. Patients in Sweden are currently receiving different treatment and have different access to pharmaceuticals depending on the county they live in. In an effort to counteract this, the 21 Swedish counties through their association SKL (The Swedish Association of Local Authorities and Regions) as well as the Swedish state (mainly through TLV and the Swedish National Board of Health and Welfare) have created the national initiative for orderly introduction with the ambition to introduce and procure pharmaceuticals as one unit. The initiative comprises includes both prescription and in-patient pharmaceuticals, and aims to ensure that the introduction of new pharmaceuticals shall follow clear practices and procedures too allow all patients in Sweden the same access. (SKL, Report Ordnat Införande, 2014)

4.1.1 Pharmaceuticals in Sweden

A pharmaceutical is a product meant to prevent, treat or diagnose diseases with humans or animals. (MPA, Homepage) Today, approximately 7000 different kinds of pharmaceuticals aimed for humans are either available as generic or brand medications. (Vårdguiden, Homepage). In the last couple of years, a revolution has occurred in understanding why diseases emerge, and how to treat and prevent them. (Fass.se) Life expectancy in Sweden is increasing by one year every six years and one-third of this increase can be attributed to new medical treatments. (Jiborn, 2014) As more and more pharmaceuticals are developed, they also become more and more targeting. On the plus side, the treatments are more tailored for each specific disease and patient while on the downside, the councils are burdened with higher pharmaceutical costs allocated to smaller patient groups.

In order to be sold on the Swedish market, all pharmaceuticals have to be approved by the European Medical Agency (EMA). In this process, the Swedish Medical Product Agency (MPA) is responsible for the medical evaluation and control of pharmaceuticals in Sweden. (MPA, Homepage) Secondly,
TLV makes evaluations and a final decision on which pharmaceuticals should be included in the national reimbursement system. (TLV, Homepage)

4.1.2 Medical Technology in Sweden
Medical Technology (in the following text ‘medtech’) is any instrument, apparatus, appliance, software, material or other article, intended to be used for human health treatment. (European Commission, “EU Medical Devices Directive”) Medtech products are thus a heterogeneous group, ranging from syringes and plasters to surgical robots and IT systems. There are no Swedish records on the amount of medical devices on the market, but a reasonable estimate is that there are about 500,000 unique medical products available in Sweden. (TLV, Homepage)

In order to gain permission to be sold on the Swedish market, all medtech products must bear the European CE-marking. The MPA is the agency in charge to ensure that all medtech products sold in Sweden comply with the requirements of relevant legislations. (Tenander, OSEC Report, 2012)

The Swedish Pharmaceutical industry consists of approximately 100 pharmaceutical companies that active in developing, producing, and marketing pharmaceuticals for use as medications. In total, the industry spends about 15 billion SEK annually. Each year, the pharmaceutical industry contributes with over 40 billion SEK to Sweden's GDP. Pharmaceutical also account for 5 percent of Sweden’s total exports (~56 billion SEK in 2013) with a trade surplus of over 25 billion SEK. Together with its suppliers, the industry employs about 20,000 people. (LIF, Homepage)

The Swedish Medtech industry has a proud history of groundbreaking innovations such as the gamma knife, dental implants, the implantable pacemaker and the dialysis. These innovations have built leading companies and the industry has had a consistent GDP contribution growth of 10 %. In 2009, about 480 Medtech companies in Sweden had at least five employees and a minimum of 1 million SEK turnover. Approximately 180 of these companies had their own production in Sweden. (Tenander, OSEC Report, 2012)

4.1.3 Categorizations of medical treatments and their financing system
Depending on their characteristics, pharmaceuticals can reach patients through three different categories: OTC, prescription and in-patient. As for medtech, there are no such clear categorizations; however, for the sake of comparison, the same categorizations as for pharmaceuticals are applied below.

OTC

OTC for Pharmaceuticals: All pharmaceuticals that do not require a prescription are available in Swedish pharmacies (and to a certain extend in grocery stores). Examples of common OTC pharmaceuticals are painkillers, eye drops and nasal sprays. Pharmaceuticals that fall under this category are purchased by patients directly and generally not subsidized by either state or county. (TLV, Homepage)

OTC for medtech: Most CE-marked medtech products can be purchased over the counter by pharmacies or retailers. Examples of common OTC medtech products are patches and condoms. Similar to OTC pharmaceuticals, generally no subsidies by either state or county apply. (Andersson, 2012)

Prescription
Prescription pharmaceuticals: Prescribed pharmaceuticals are provided by pharmacies and purchased by patients with prescriptions from physicians. Prescription pharmaceuticals are mainly financed by the Swedish state through the national reimbursement system, where each patient is only required to pay a maximum of 2200 SEK per 12-month for pharmaceuticals covered within the system. All cost occurring thereafter are covered by the reimbursement system. Purchases are then invoiced by the distributing pharmacy to the respective county. To finance these expenses, the county in turn receives a yearly subsidy from the government. All expenses on prescription pharmaceuticals that supersede the annual subsidy have to be financed by the respective counties as long as it is under +3 percent of the subsidy. Thereafter, the state is committed to finance 50 percent of the overdraft. (SKL, Homepage)

Prescription for medtech: This study categorizes all medtech products that are part of the national reimbursement system as prescription medtech. Mainly, medtech products that are part of the reimbursement system are consumables. There are three groups of consumables; products to supply the body pharmaceuticals (e.g. needles), products for self-monitoring of medication (such as test strips) and products for stoma (e.g. ostomy bags). Today, around 3700 consumables are part of the national reimbursement system. (TLV, Homepage)

In-patient

In-patient pharmaceuticals: Refers to all pharmaceuticals administrated within the walls of a hospital (or other care-center). Physicians and nurses in accordance with the patient’s need directly administrate these pharmaceuticals. In-patient pharmaceuticals do not fall under the national reimbursement system and are therefore financed by the county of the respective hospital. (TLV, Homepage)

In-patient for medtech: In-patient medtech account for consumables but also for products characterized by more long-term investments such as x-ray machines and operation robots. The county of the respective hospital finances such medtech products. (Swedish Medtech, Homepage)

4.1.4 Purchasing processes and negotiating prices

OTC pharmaceuticals
Procurement of OTC pharmaceuticals is usually conducted by the respective pharmacy or retailer through wholesalers. The choice of prices for OTC pharmaceuticals is free. (ISPOR, Homepage)

Prescription pharmaceuticals
For prescription pharmaceuticals that are included in the national reimbursement system, no price negotiations occur. Prices are integrated as part of the cost-effectiveness analysis conducted by TLV. Too high prices will be deemed not to be cost-effective and therefore rejected. The pharmaceutical company can then decide whether to re-apply the pharmaceutical at a lower price in order to be included (SKL, Homepage) Prescription pharmaceuticals included in the reimbursement system are distributed via pharmacies who sell the drugs at the approved price. Pharmacies receive a trade-margin for their distribution services, but are not allowed to change prices. (TLV.se)

In-patient pharmaceuticals
Cost of in-patient pharmaceuticals are not covered by the national reimbursement system. Instead, the county councils are solely responsible for costs for pharmaceuticals used in hospitals. The purchasing organizations in the county council negotiate with hospital management to establish financial contracts. A budget for pharmaceuticals is usually determined by the historical costs and by the price negotiations between council and pharmaceutical providers (usually wholesalers). The county council is then responsible to procure pharmaceuticals for the hospitals. Negotiation on possible discounts is
held directly with the pharmaceutical company. Each county council has at least one pharmaceutical committee to advice and support the procurement body. The committee can for example support physicians with a list of recommended pharmaceuticals that have been proven to be both medically and economically beneficial (e.g. SLL’s Wise List). (Svensson, 2009)

4.1.5 The process of budgeting for the costs in Swedish healthcare
Today, budgeting of healthcare occurs on all levels e.g. national, regional and local however the main responsibility lies on the counties (regional level) where the budget processes differ from county to county. The state subsidizes part of the prescribed pharmaceuticals as well as some medtech; in 2014 this number was around 19.4 billion SEK and 1.2 billion SEK respectively. (Socialstyrelsen, 2015; TLV, Homepage). The individual counties are then responsible to provide their inhabitants with suitable healthcare within primary and secondary care. In-patient care and prescription based care exciding the budgeted governmental subsidy system is paid by the council. The councils are funded by a council tax, (as part of the local tax), ranging from 10.18 % (Norland) to 12.10 % (Stockholm) in 2015. Each county council makes its own decisions on the tax rate and how to allocate tax revenues. In addition, county councils also receive income from the state budget, patient fees and the sale of services. (Hjortsberg & Ghatnekar, 2001; Swedish Government, Homepage)

4.1.6 The cost of pharmaceuticals and medical technology

Total cost for Swedish healthcare
One of the largest concerns for the Swedish healthcare system is how to – in the coming decades – be able to finance an aging and growing population with limited financial resources. (Blixt, Interview)

Today, the total costs for healthcare is estimated to approximately 343 billion SEK, including dental care, public healthcare, pharmaceutical and healthcare investments\(^1\). As seen in the graph below, the increase has been 17.3 % over the last 10 years, however stagnation in cost has occurred in recent years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Healthcare total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>293 116</td>
</tr>
<tr>
<td>2005</td>
<td>299 174</td>
</tr>
<tr>
<td>2006</td>
<td>308 946</td>
</tr>
<tr>
<td>2007</td>
<td>317 069</td>
</tr>
<tr>
<td>2008</td>
<td>326 618</td>
</tr>
<tr>
<td>2009</td>
<td>335 384</td>
</tr>
<tr>
<td>2010</td>
<td>336 263</td>
</tr>
<tr>
<td>2011</td>
<td>343 893</td>
</tr>
<tr>
<td>2012</td>
<td>343 758</td>
</tr>
<tr>
<td>2013</td>
<td>343 700</td>
</tr>
<tr>
<td>%</td>
<td>+ 17.3</td>
</tr>
</tbody>
</table>

\(^1\) The total expenditure for healthcare is estimated for 2013 and not yet available for 2014. (Statistics Sweden 2015-03-28)
Costs of pharmaceuticals
Pharmaceuticals represent roughly 10-11% of the total healthcare costs. In 2014 the total cost was approximately 37 billion SEK, where OTC pharmaceuticals accounted for approximately 3.3 billion SEK, prescription pharmaceuticals for 26.5 billion SEK (of which 19.4 billion SEK where included in the reimbursement system) and in-patient pharmaceuticals for approximately 7 billion SEK.

As seen in the graph and table above, opposite to the total healthcare costs, which have steadily increased over the last decade, the total cost for pharmaceuticals has had a much slower growth, with costs even decreasing at times during the last years. Important factors for these cost reductions are patent expiries and generic competition. (Socialstyrelsen, 2015)

In 2014, a trend break occurs, where e.g. costs for pharmaceuticals in the reimbursement system increased with 0.2 %. As for the coming years, the cost increase for pharmaceuticals within the reimbursement system is predicted to be around 2.75 % in 2015 and 4.5% in 2016. This increase can be seen as worrisome, however it is moderate (in comparison to what it could have been) as TLVs reassessments and generic competition is pushing the prices down. (Socialstyrelsen, 2015)
Resolving a wicked issue in a market setting

On a county council level, taking SLL as an example, cost for healthcare was 18 billion SEK in 2014 and are expected to increase by 6.1% during 2015. Cost of pharmaceuticals accounts for 6% of the total costs, while medtech products are not reported specifically. (SLL, Homepage)

![Example of cost distribution within councils: SLL](image)

**Figure 6 - Source: SLL, 2015**

**Costs of medical technology**
In Sweden, there are no routines of separating medtech expenses as single budget post. Medtech products are accounted for differently in counties and hospitals, making a determination of the yearly turnover difficult. (TLV, 2014) However a modest estimation is that Swedish counties and municipalities spend about 20 billion SEK per year on medtech product. (Blixt, Interview; TLV, Homepage) In addition, medtech products included in the reimbursement system account for roughly 1 Billion SEK / yearly. (TLV, Homepage; Laestadius, Interview)

### 4.2. Market actors and cost containment

*In this section, the market actors; LIF, the Swedish government, TLV, Swedish county councils, hospitals and physicians as well as other influential voices such as media and patient organizations are described in reference to their role and opinion on cost containment.*

**4.2.1 LIF - The Swedish Association of the Pharmaceutical Industry**
Läkemedelsindustriföreningen (LIF) is the trade association, representing the interests of the research-based pharmaceutical industry in Sweden. With 85 members and associate companies - accounting for approximately 80% of the total sales of pharmaceuticals in Sweden - LIF represents its members in issues of common concern, assisting them on questions vital to the industry. (LIF, Homepage)

**LIF role in cost containment**
With an overall goal to improve quality of life for all people in Sweden, LIF aims to take part in continuously developing the Swedish health- and medical care system by pushing for R&D, equal care, and access to and better use of innovative pharmaceuticals. Concerning cost containment, LIF actively takes part in collaborations and discussions with healthcare actors such as politicians, officials and patient representatives in research projects and studies, one example being the National Board of Health and Welfare’s annual report on pharmaceutical sales. In addition, LIF produces its own reports, studies and press releases on important topics. (LIF, Homepage; Socialstyrelsen, Homepage)
Resolving a wicked issue in a market setting

**LIF view upon cost containment**

The question of cost containment of pharmaceuticals has for a long time been a concern for LIF. Karolina Antonov, Head of Strategy describes a difficult situation where the different actors i.e. the industry vs. politicians and healthcare officials are trying to find a common viewpoint and understanding of the market. LIF's viewpoint is that the pharmaceutical market is disproportionately cost-contained compared to other areas of healthcare and have for a while felt a sense of frustration that politicians, officials and the public opinion seem not to take in facts regarding the development of pharmaceutical costs in relation to total healthcare- and medical costs.

Antonov likens the current system of cost containment to a metaphor of “gas and break”. A system needs breaks to ensure that cost of pharmaceuticals do not drift away, simultaneously there must also be incentives that drive the innovation forward. For pharmaceuticals, Antonov argues, breaks in the system where created during the late 1990’s/beginning of the 2000’s when Sweden had an unsustainable development of pharmaceutical costs. Several actions were taken to contain costs: the generic reform (Socialstyrelsen, 2014), the creation of TLV, the creation of pharmaceutical committees within the counties and the introduction of new forms of performance measurements. This also contributed to an increase focus on cost containment. Today, these structures have become self-sustaining where actors are rewarded by success connected to costs-savings rather than system improvements. The indoctrinated and in-built cost-focus has made it difficult to stop these “breaks”. Antonov also believes that decentralizing the cost responsibility, first to the counties then down to the primary caregivers has also contributed to the increased focus on costs as caregivers have incentives to save money. While many of the intentions with costs containment have had a good purpose, Antonov raises the question whether the increased documentation and control actually delivers pareto-improvements and more value to the system. Rather, Antonov believes the whole regulatory system and market access activities risk hitting a ceiling, resulting in a situation where there is not enough gas in the system. Measures of cost containment are established to the degree that some counties noted that they did not spend all of their allocated innovation budgets for new pharmaceuticals.

LIF advocates the need for a healthcare system, which ensures that costs for pharmaceuticals do not drift away while simultaneously finding the appropriate level of cost containment to allow for new medical innovations and pharmaceuticals to reach patients. To ensure the best possible treatment for patients, as well as to facilitate a strong life-science sector, LIF wants to find a way to snap out of the cost focus for pharmaceuticals and reconnect to a medical discussion. Antonov highlights that sub-optimizations occur where significant resources are spent on evaluating pharmaceuticals in the introduction phase, however less on overcoming double medication and non-compliance later in the process.

LIF argues for four improvements. Firstly, LIF would like to see a common vision among market actors on the cost for pharmaceuticals. A comprehensive concept that aligns everyone around the same goal. Secondly, new meeting arenas need to be created. Today, the physicians have limited possibilities to get acquainted with new pharmaceutical during the development phase, which could decreases the threshold to use the pharmaceutical later. Thus, it could be beneficial for both the industry and healthcare providers to establish new forms of corporation and create new arenas to fill the gap created by the decreased number of clinical trials. Thirdly, the pressure of administrative duties (e.g. budget responsibility) needs to be decreased so that physicians can resume focusing on their profession. Finally, more should be done to increase patients’ knowledge so they can assess whether they are provided with the right kind of care. (Antonov, Interview)
LIFs opinion about the difference between pharmaceuticals and medical technology

According to Antonov, medtech is on the path to a similar situation as pharmaceuticals, moving towards more standardized evaluation processes. However, it is hard to predict if the cost containment of medtech will be able to adopt same procedures as pharmaceuticals due to the difficulty to standardize medtech treatments.

Antonov notes, that from her perspective, there seems to be less mistrust for the medtech industry in general. This might be due to two factors. Firstly, the fact that the medtech industry is characterized by smaller start-up companies while pharmaceutical companies can be perceived as Big Pharma. Today however, many pharmaceuticals are affected by price pressure and may be approaching a business model not sustainable in the long-run. Secondly, a large difference is the products themselves. With an investment in an x-ray for example it is legitimate and comprehensible with high price. With pharmaceuticals on the other hand, it may be more difficult to argue for someone that used to pay 100 SEK for a white pill to pay 15,000 SEK for a new white pill looking the same. Finally, Antonov notes a more natural relationship of collaboration between healthcare providers and medtech companies compared to pharmaceuticals.

In a final remark, Antonov acknowledges that cost containment of both pharmaceuticals and medtech will probably always be a hot topic, as there will always be mistrust towards making profits on sick people.

4.2.2 Swedish Medtech - the Association for medtech companies in Sweden

Swedish Medtech is the association for medtech companies in Sweden with approximately 170 member companies; representing nearly 90 percent of the total turnover in the medtech market in Sweden. The Association’s main goals is to i) position medtech as a prerequisite for an effective healthcare. ii) strengthen the premises of the medtech field in order to attain the best possible climate for research, innovation, investment, production and enhanced know-how in Sweden. iii) improve business conditions for the medtech field on the global market and iv) create the best conditions for its members to interact with healthcare institutions. (Swedish Medtech, Homepage)

Swedish MedTech role in cost containment

To achieve the above-mentioned goals, Swedish Medtech continually communicates with their collaborators, such as county councils, state offices and other authorities. The Association also works towards creating awareness of the medtech field among the Swedish public. (Swedish Medtech, homepage) Swedish Medtech mainly advocates the need to evaluate a patient’s whole healthcare chain, in order to determine appropriate treatments with regards to medtech and/or pharmaceuticals. Swedish Medtech supports a development towards more evaluation of medtech products based on health economic analysis and therefore closely collaborates with TLV. (Læstadius, Interview)

Swedish MedTech view upon cost containment

Petrus Læstadius, Vice President of Swedish Medtech, considers the idea of cost containment to be reasonable and necessary to control the huge amount of money that healthcare spends every year. However, Læstadius argues that the current system leads to many suboptimal decisions, as a patient’s entire healthcare value chain is not considered. This leads to prolonged periods of illness, as the system does not allow for investments in either knowledge or technology to improve the system. Furthermore, Læstadius argues that the current budgeting system has flaws, as it delegates both decision and budget responsibility out to caregivers. Caregivers will therefore not be able to take
decisions based on a holistic understanding but rather on their own limited knowledge and interest. (Læstadius, Interview)

**Swedish Medtech opinion about the differences compared to e.g. pharmaceuticals and personnel**

Læstadius notes that it is much easier to contain the costs of medtech products and pharmaceuticals compared to e.g. personnel. Amongst the public, there is a perception that more investments in medtech might lead to healthcare personnel becoming expandable. According to Læstadius, this is a misconception and the real problem lies in that medical personnel today are occupied with trivial assignments. Recent reports have actually shown that there will be too few suitable employees to hire in the future. In order to tackle healthcare issues in the coming decades, the system needs to become smarter and more efficient while also making better use of the resources available. Medtech can assist in that development. Rather than resulting in the termination of nurses, nursing assistants and physicians, medtech can allow personnel to focus on treating patients. (Læstadius, Interview)

**4.2.3 The Swedish state**

On a national level there are several control bodies subordinated to the Ministry of Health and Social Affairs (Socialdepartementet).

- *The National Board of Health and Welfare* (Socialstyrelsen) is a supervision organization that evaluates health service provision.
- *The Swedish Council on Health Technology Assessment* (SBU) examines the methods used in healthcare and make objective assessments of their costs, risks and benefits.
- *The Swedish Agency for Health and Care Services Analysis* (Vårdanalys) evaluates and analyzes quality of activities and performance in both public and privately financed healthcare from a citizens' perspective.
- *The Medical Products Agency* (Läkemedelsverket) approves and regulates pharmaceuticals, natural remedies, and medtech products, to ensure individual patients and professionals have access to safe and effective products.
- *The Dental and Pharmaceutical Benefits Agency* (TLV) remit is to determine whether a pharmaceutical product, disposable product or dental care treatment should be publicly subsidized.

(Socialdepartementet, Homepage)

**Swedish state role in cost containment**

Each control body has its own role in controlling and evaluating the healthcare system. Legislation, policy-making and the development of standards and recommendations are the main activities. On a national level, this includes e.g. the Patient Safety Act, the Public Procurement Act as well as the ethical framework of prioritizations within healthcare containing the three principles of *i)* human dignity principle, *ii)* the needs and solidarity principle and *iii)* cost efficiency principle. These principles also form the foundation of TLV’s health economic evaluations. (Socialdepartementet, Homepage)

Since 1998, the Swedish state and SKL have an agreement on a state subsidy to county councils for pharmaceutical expenses. Through the subsidy, the state wants to ensure that effective and safe pharmaceuticals can be prescribed at a reasonable cost to patients across Sweden. (Government, 2014)
4.2.4 TLV - The Swedish Dental and Pharmaceutical Benefits Agency

**TLV’s role in cost containment**
As mentioned above, TLV’s main task is to determine which pharmaceutical products, care-related medtech product (and dental care procedures) shall be subsidized by the state. In these assessments, TLV decides how much a pharmaceuticals or a medtech product should cost and determines what trade-margin pharmacies should receive for distributing pharmaceuticals in the reimbursement system. In addition to assessing new pharmaceuticals, TLV works systematically with evaluating pharmaceuticals already included in the reimbursement system to determine whether the subsidy should be maintained, restricted or expanded. In these evaluations, renegotiations of price often occur with the specific pharmaceutical company. (TLV, Homepage; Blixt, Interview)

In 2012, TLV was commissioned by the Swedish state to conduct health economical assessments also for medtech products. The project was carried out on a trial basis and initiated to aid the county councils to make more informed decisions regarding medtech products. (TLV, Homepage; Blixt, Interview)

**TLV view upon cost containment**
As Antonov, Niklas Hedberg, Head Pharmacist at TLV, suggests that the concern of cost driving pharmaceuticals has its roots from the 1990’s, when costs of pharmaceuticals increased by double-digit percent annually. The stagnation of costs in recent years, Hedberg explains, is a result of efficiency improvements and cost reductions, especially in the segment of generics and generic substitution, but also a stagnated pipeline of new pharmaceuticals. Hedberg further acknowledge that LIF’s opinion regarding a historically low rate of new introduction certainly holds a truth; however, he still trusts that pharmaceuticals with substantial medical value for patients will be financed and reach needing patients. In line with the Ministry of Health and Social Affairs forecasts, Hedberg predicts that the cost of pharmaceuticals is cyclical, expecting pharmaceutical costs to rise eventually. In the light of this forecast, Hedberg describes an increasing concern expressed by the counties on how such a scenario should be handled, as they are currently only narrowly able to finance the current costs. A former TLV employee provides an additional perspective on TLV’s role in cost containment, as he believed that TLV certainly deems many pharmaceuticals to be cost-effective with regards to a health economical evaluation but that the problem arises in connection to silo-budgeting where the counties cannot pay for the innovation. Pharmaceuticals can be cost-effective from a society perspective but cost-inefficient from an isolated county’s perspective. The interviewee suggests that increased collaboration among the market actors is needed to ensure the right balance of manageable costs and good access to treatments.

**TLV opinion about the differences between pharmaceuticals and medical technology**
Hedberg estimates that comparisons between pharmaceuticals will increase. However, he sees difficulties with making feasible comparisons between pharmaceutical and medtech products. The pharmaceutical market is more mature and has better conditions to make comparisons. In contrast, innovations within medtech often lead to the creation of new patient flows and as many factors are changed in the flow, it becomes difficult to perform an analysis and find casual relationships. This is also one of the reasons why pharmaceuticals are more cost contained today in comparison to medtech. (Hedberg, Interview; Blixt Interview) Another explanation presented by Malin Blixt, Head of Unit for Medtech Assessment at TLV, is that medtech historically has been less cost contained due to the fact that no institution or public organ has demanded similar requirements as for pharmaceuticals.
Hedberg predicts that rather than assigning fewer resources to assess value for money for pharmaceutical costs, it is more likely that value for money-assessments in other cost areas of healthcare will increase to the same, or a comparable level. In recent years, more emphasis has been put into evaluating medtech products, as costs for pharmaceuticals have been constant, while new medtech products and solutions have been developed at an increasing rate. An awareness exists that medtech is needed to manage healthcare in the future but that the cost for the products will grow proportionally to the rate of new products introduced. (Blixt, Interview) Decision-makers will therefore need to be able to determine which products add value and which do not, according to Blixt, while such evaluations are possible they are currently not conducted.

Today, TLV houses three separate pharmaceutical units compared to one medtech unit. (TLV, Homepage)

4.2.5 The Swedish county councils
The main responsibility of healthcare service provision falls onto the 21 independent county councils in Sweden. (Hälso- och sjukvårdslagen, 1982) Cost containment within the respective counties can vary. For the purpose of this study, the Stockholm county council (SLL) was chosen to exemplify the structure and perspective on cost containment of pharmaceuticals within a county.

In Stockholm, the county council has overall responsibility for caring for the county's inhabitants, providing care under the county council's own management or privately. Around a third is dealt with by private care providers, such as family physicians, physiotherapists, maternity clinics and hospitals.

**County council (SLL) role in cost containment**
At SLL, there are several factors influencing the cost containment of pharmaceuticals. Politicians and political officials are responsible to set the overall strategy and decide on a suitable infrastructure for the healthcare system. This includes budgeting for both prescription pharmaceuticals as well as hospital budgets including in-patient pharmaceuticals. Through budgets, regulations and guidelines, politicians and political officials set the cost containment boundaries for SLL. (Wallenström, Interview)

Within SLL, the Pharmaceutical Committee (Läkemedelskommittén) as well the Pharmaceutical Unit (Läkemedelsenheten) are in charge of promoting safe, efficient and cost effective use of pharmaceuticals. Both the committee and the unit, provide caregivers with recommendations on preferred pharmaceuticals (prescription and in-patient), perform procurement negotiations and represent SLL in SKL collaborations. Through this, SLL wants to ensure that patients receive the best and most cost-efficient care given the provided budget restrictions. (Thyberg, Interview; Befrits, Interview; Janusinfo, Homepage)

**County council (SLL) view upon cost containment**
Politicians and political officials. Mårten Wallenström, SLL Political Official for the Liberal Party (Folkpartiet), considers SLL to have become gradually better in finding the appropriate level of cost control and access to pharmaceuticals and emphasizes the success of the “Wise List” system. By combining expertise from various groups, SLL can make recommendations on the priority in which pharmaceuticals are used. According to Wallenström, the newest, most expensive pharmaceutical is not always necessarily the most suitable. The SLL cost containment system notions on the idea that an effective use of inexpensive pharmaceuticals will provide SLL with the opportunity to finance new, more expensive, pharmaceuticals when needed.
Anders Lönnberg, Stockholm County Politician for the Social Democrats (Socialdemokraterna), argues that the current system of cost containment steers decision-makers towards overly focusing on keeping every year’s budget, thereby decreasing the incentive to invest in and procure value-adding, but expensive, pharmaceuticals. In addition, Lönnberg believes silo budgeting is a major concern. As the county councils today cannot account for the benefits created by pharmaceuticals in their budgets, there is little incentive for long-term investment. In that case, it does not matter if TLV deems a pharmaceutical to be socially beneficial, as the county will not procure it. Lönnberg believes that it is the politician’s responsibility to push change and create incentive systems that promote innovation. According to Lönnberg, research and development of the healthcare system should be the main focal area to handle the challenges of the future.

Lönnberg also perceives the current compensation system as a cause of the issue, as it inhibits innovation and creates too much cost containment. The current system treats all new technologies - pharmaceuticals, medtech products and new forms of treatment - as potential threats to the current compensation scheme. Today, primary caregivers receive reimbursements for every patient visit; however, a reduction of visits through the use of pharmaceuticals limits the amount of reimbursement received, thus lowers the incentive for caregivers to introduce innovations.

*County officials working with pharmaceuticals.* In contrary to Lönnberg, both Gustaf Befrits, Officer at SLL’s Pharmaceutical Unit and Magnus Thyberg, Head of SLL’s Pharmaceutical Unit deem the current rate of introductions of new pharmaceuticals as well as the related cost containment system to function fairly well. Both believe that the current system allows for very beneficial pharmaceuticals to reach patients fast, while pharmaceuticals that only offer smaller benefits at a higher price are mostly discarded by the system.

Befrits understands LIF’s interest in defending innovation within pharmaceuticals but upholds that it has likely more to do with LIF’s desire to secure their companies’ market position, not necessarily because they want to produce better pharmaceuticals. Befrits believes the industry is cutting its own legs from underneath, by setting prices so high. According to Befrits, the industry is still doing very well with major profits since the late 1970s. One issue that inhibits trust for pharmaceutical companies is the fact that they invest on average of 20% of the budget on R&D while around 40 % is spent on Sales & Marketing indicating that the companies receives twice the return on investment on Sales & Marketing. Befrits concludes that he has an ambivalent attitude to the pharmaceutical industry: their research is good but the investor’s role in pressuring for profits may be damaging.

*County councils opinion about differences between pharmaceuticals and medical technology*  
With regards to other areas of healthcare costs, both Thyberg and Befrits conclude that personnel is a sensitive area to audit as it surrounds humans and their jobs. In addition, it is a more unwieldy cost structure to change and rearrange mainly due to labor laws. Thyberg also explains that while facilities also account for a large cost base, it is harder to cut costs and make savings once a building is in use. Thyberg recognizes medtech as the only major cost area that could be contained and evaluated in a similar way as pharmaceuticals. However, Befrits adds that while pharmaceuticals are built on health economic analyzes, it is very difficult to set the value for medtech, which makes medtech products both difficult to purchase and evaluate. In addition, the main responsibility for procuring medtech products lies with caregivers and not centrally at SLL, making it difficult to control procurements. (Befrits, Interview) Pharmaceuticals and medtech, in comparison to personnel, are easily considered as externalities, why - in constricted financial situations - they are the first to be contained. This is understandable but not sustainable according to Lönnberg.
4.2.5 SKL - The Swedish Association of Local Authorities

The Swedish Association of Local Authorities and Regions (SKL) represent the municipalities and county councils. (Swedish Government, Homepage) Since 2013, SKL facilitates pharmaceuticals in Swedish healthcare through a collaboration model “Samverkansmodellen för läkemedel”. All county councils and regions have voluntarily joined the cooperation, working jointly with pricing, introduction and monitoring of pharmaceuticals. The model aims to enable healthcare authorities to make informed and rapid decisions on the use of new and more costly pharmaceuticals, in order to assure cost effective and equal access to pharmaceuticals to all patients throughout Sweden without undue delay. (SKL, Homepage)

The SKL collaboration model consists of four functions

**The NT-council** (NT-rådet) has mandate to make recommendations to the county councils on the use of new pharmaceuticals.

**The Negotiation delegation** is mandated by the county councils to, together with TLV, perform three-party negotiations prices with pharmaceutical companies.

**Horizon scanning** enables anticipation of introduction of new pharmaceuticals through the identification of future pharmaceuticals to the county councils.

**The Market function** works strategically, and monitors the pharmaceutical market and support the county councils with common agreement templates, price databases and identify procurement opportunities.

Figure 7 - Source: SKL, Homepage

**SKL role in cost containment**

Up until now, the collaboration model has been tried on a few new pharmaceuticals, in which both evaluation and procurement of a pharmaceutical was performed jointly by all counties. Due to its newness, the model currently has limited influence on cost containment of pharmaceuticals in general. However, should the model become more established, many of the current cost containment functions carried out by the individual counties will be transferred to the collaboration, especially regarding price-negotiations. In January of 2015, the previous NLT-group turned into the NT-council, taking out the “L” (as in “Läkemedel” i.e. pharmaceuticals) which was an indication that the focus of the collaboration in the future also aims to include other forms of treatments besides pharmaceuticals (e.g. medtech). The NT-council is however today only equipped and staffed for pharmaceutical evaluations. (SKL, Svensson, Interview)

**SKL view upon cost containment**

According to Sofie Alverlind, coordinator for the NT-council, cost containment is needed to ensure the highest possible value for every taxpayer’s money spent. Alverlind sees that, while every stakeholder has the same common interest of providing patients with the best possible treatment, there is a conflict of interest in that pharmaceuticals companies also need to generate as much profits as possible. Pharmaceutical companies will always push for their product and want to emphasize patients that their product could help. This makes control and evaluation of pharmaceuticals important as finite financial resources limits the amount of pharmaceutical that can be distributed to patients. Evaluations help
determine the priority in which patients should be treated. Mikael Svensson, coordinator for negotiations and procurement concerning pharmaceuticals for the NT-council, adds that the established collaboration model aims to create a better and more equal healthcare in Sweden by being quicker in evaluating, procuring and following up on pharmaceuticals. The collaboration aims to contain costs for pharmaceuticals in a right way, by ensuring that good pharmaceuticals can be introduced quickly with equal access for patients all over Sweden at the best possible price. Simultaneously, the controls should also stop mediocre pharmaceuticals that do not provide significant health gains, from being procured. (Svensson, Interview)

**SKL opinion about differences between pharmaceuticals and medical technology**

According to Alverlind and Svensson, the structure, the information as well as the regulation process surrounding pharmaceuticals is significantly better than for e.g. medtech. The infrastructure for control is much more developed as every county has a special unit for the control of pharmaceuticals, while it is mostly individual physicians or caregivers that purchase medtech products when the need arises. In addition, the network of knowledge-sharing between counties for medtech is less developed. (Svensson, Interview) Regarding regulatory matters, in order to sell medtech product, the companies only have to receive a CE-marking, which they can apply for by themselves. The process for pharmaceuticals on the other hand is much more thorough as the tools are better in place to evaluate the benefits. (Svensson, interview)

### 4.2.6 Hospitals, hospital management and physicians

Sweden has a total of 9 regional hospitals, 70 district county hospitals, and approximately 950 health centers. (Vartiainen, 2003) In total, these healthcare institutions employ approximately 30 000 physicians. (Läkarförbundet, homepage). Similar to counties, hospitals and other care providers can vary substantially in their budget size, system of cost containment, prioritizations and needs. The hospitals’ structure and financial resources largely depend on the influence of the respective county their act within. To gain deeper understanding of the structure and perspective on cost containment on the hospital level, the Karolinska University Hospital (below Karolinska) was chosen as an example, however cannot necessarily be seen as representative for all hospitals in Sweden.

Situated within the bounds of SLL, Karolinska is one of the largest University Hospitals in Europe, with 1700 hospital beds, 15 300 employees and 15.7 billion SEK in turnover (2013). Karolinska believes patient care, research and innovation as well as education must all play equally strong roles in the effort to extend and enhance people's lives. (Karolinska, Homepage)

**Hospitals (Karolinska) role in cost containment**

**Management:** Cost containment within hospitals is strongly influenced by budget restrictions of in-patient pharmaceutical set in negotiations between the county and hospital management. In the case of Karolinska, the budget is negotiated on a semi-yearly basis. In addition, Karolinska also controls a separate innovation budget of 250 million SEK aimed to finance pharmaceutical and medtech innovations. The innovation budget was established to ensure the possibility of investments in new treatments, which would not have fitted into the regular budget. (Bratt, Interview)

**Physician:** On a county level as well as in the work of state organizations, physician have an important role, as they act as experts and participate in advisory boards for the evaluation of pharmaceuticals and other treatments connected to their expert field. Within SLL, physicians participates e.g. in activities of the Pharmaceutical Committee (Läkemedelskommittén) as well the Pharmaceutical Unit (Läkemedelsenheten). However, over the last decade the role physicians play in the introduction of
new pharmaceuticals and in clinical trials have changed as the interaction between the pharmaceutical industry and the profession has undergone strict regulations to prevent e.g. bribery. (Antonov, Interview) This cost containment action have had effect, however, some interviewees argue that the clinical trials and innovations are hurt by this partition. (Antonov, Interview)

**Hospitals (Karolinska) view upon cost containment**

Physicians in Sweden carry the exclusive right to prescribe pharmaceuticals. However, physicians today often need to balance prescribing the best possible care for its patients while taking into consideration the burden and cost-effect each treatment will have. This increasing demand on physicians to weight human lives and quality of life against cost-efficiency in his/her treatment decision is a sensitive topic. Cost containment measures aiming at influencing which pharmaceuticals to be prescribed are received differently by market actors. While some believe such initiatives support physicians in making more educated decisions (especially when prescribing pharmaceuticals outside their area of expertise), others question whether it is wise for physicians to be influenced by financial rather than only medical incentives. (Bratt, Lönnberg, Antonov)

In SLL, physicians are recommended to follow the “Wise List” (Kloka listan), a list of around 200 recommended pharmaceuticals for treatment of common diseases, established by SLL’s pharmaceutical committee. The recommendations are based on scientific evidence regarding pharmaceutical effectiveness, environmental as well as cost efficiency aspects. (Janusinfo, Homepage) Additionally, the generic reform mandates pharmacies to replace every prescription pharmaceutical in the reimbursement system with cheapest generic substitute. (Socialstyrelsen, 2014)

**Hospital (Karolinska) opinion about differences between pharmaceuticals and medical technology**

As many of the interviewees above, Bratt considers the higher focus on pharmaceuticals to be due to the existing structure surrounding pharmaceuticals compared to medtech, where knowledge structures and processes are less developed. In addition, Bratt deems personnel as a sensitive area to address although it accounts for a large percentage of the budget. With tight budgets and with Stockholm as a growing region, Bratt acknowledge that Karolinska must constantly work with cost savings and become more efficient in its use of both pharmaceuticals, medtech and personnel.

**4.2.8 Patient organizations**

In Sweden, 33 patient organizations exist of today, with the purpose to advocate for better healthcare concerning their respective disease. (Fass, Homepage)

**Patient organizations role in cost containment**

Patients and patient organizations have the possibility to be an important advcocator for innovation and a driver to ensure that new, better pharmaceuticals reach the patients in Sweden. Patients also have the possibility to question whether a treatment proposed to them is based on medical or financial incentives. (Lönnberg, Interview; Antonov, Interview) Today, similar to the physicians, patients, through patient organizations, participate in regional and national investigations related to healthcare in order to secure that patients get the best possible care. Patient organizations on a regular basis also use media as a channel to put pressure on politicians and decision-makers to reach better healthcare for their members. An example of this is the Swedish Patient Organization for Diabetes which were extremely effective in ensuring that all diabetics had free access to all relevant pharmaceuticals and medtech products, something that was unprecedented compared to other diseases. (Hertzman, Interview) The pharmaceutical industry also promotes increased measures to improve patient knowledge in order to assess whether they are provided with the right kind of care. (Antonov,
Simultaneously, cost containment serves the purpose to have the ability to take care of patients in the best possible way, given the financial restrictions that exist. (Thyberg, Interview)

4.2.9 Media

Sweden has a long tradition of freedom of expression and prohibition of censorship, and is traditionally one of the most newspaper-reading people of the world. More than three in four adults read a newspaper every day (2011). Thus, in order to reaching out to the public media is a powerful tool and channel to direct attention and change opinions. (Landguiden, Homepage)

**Media role in cost containment**

Media can act as communication channel for market actors to voice their opinions. Similarly media also has an own agenda to audit the healthcare system for the public. The public debate regarding healthcare issues is held both in traditional media such as DN, SvD and SVT as well as within healthcare specific media such as Läkemedelsvärlden and Dagens Medicin.

**Media view on cost containment**

One criticism of media that was mentioned is that it tended to advocates the weak, but sometimes missed the whole picture in a situation. For instance, reduction of personnel is almost always seen as something bad even though it might have made the organization more efficient and healthcare better. (Lönberg, Interview)

**Media opinion about differences between pharmaceuticals and medical technology**

As can be seen in the table below e.g. pharmaceuticals has a hit rate on 6755 where medtech only accounted for 11 % of that amount in comparison. Pharmaceuticals combined with costs had a 61 times higher hit rate. For comparison, the total annual cost for pharmaceuticals in the Swedish Healthcare system is approximately 37 billion SEK while the cost of medtech is estimated around 20 billion SEK (54% of pharmaceuticals) annually. This study has not been able to determine the total cost for other areas of healthcare.

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<td>Medical Technology*</td>
<td>767 (11%)</td>
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<td>Healthcare* and Personnel*</td>
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</tr>
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</table>

Figure 8 - Media search conducted 17th of May 2015 (Retriever, Homepage)
5. ANALYSIS

In this chapter, the analysis aims to investigate how a wicked issue is resolved in a market setting. The findings are structured into three sections. The first section uses the model of markets and their practices to present a snapshot of the present state of the market practices and translations with regards to finding the appropriate level of cost containment for pharmaceuticals. In other words, how and where actors today try to solve the wicked issue. For each practice, comparisons are made to the closely related area of cost containment of medtech. The second section describes whether the issue of balancing cost containment fulfills the characteristics of a wicked issue. This aims to explain the complexity of cost containment but mostly, the objective is to provide valuable insight in how wicked issues are affected by being processed in a market context rather than within an organization. Lastly, in an in-depth comparison between pharmaceuticals and medtech, the third section describes how the market actors have attempted to solve the issue differently.

5.1 The wicked issue in the lens of markets and their practices

To analyze where and how market actors - in ongoing interactions - try to solve the wicked issue of cost containment of pharmaceuticals; the exchange, normalizing and representational as well as its translations are described below.

5.1.1 Exchange practice

Exchange practice describes activities, which contribute to temporarily stabilize certain conditions so that a market exchange becomes possible. In the case of cost containment, these activities are such which lead up to the decision of which pharmaceuticals to buy, and finding the accepted price; buyers are willing to give and sellers are willing to sell for. The idiosyncratic activities shaping exchange practices were identified to consist mainly of two activities: Negotiations between buyer and seller organization and prioritizations between i) different pharmaceuticals and ii) other cost areas of healthcare.

Market actors involved in exchange activities

- County council (SLL)
- Hospitals (Karolinska)
- Physicians
- Pharmaceutical companies
- Pharmacies (downplayed in the analysis below as pharmacies only act as middlemen in exchange practices, especially for in-patient pharmaceuticals)

Exchange activities

Negotiations on the market occur between pharmaceutical companies on the seller side, and SLL officials and hospital representatives on the buyer side. In the county of Stockholm, procurement is structured through bargaining agreements. On the buyer side, the volume of pharmaceuticals procured by a hospital like Karolinska is effectively capped by the set budgets for pharmaceutical, which in turn, is settled through negotiations with SLL. On the seller side, the pharmaceutical companies make pre-negotiation decisions connected to questions such as “what counties are most strategically to launch within, what are our reference price and under what conditions can we serve this market.”

Prioritizations influence the exchange practices through several actors’ activities, ranging from physicians to county councils. For instance, physicians have to some extent determine on what foundation to make decisions, by prioritizing between the best medical treatment for the patient and
cost-efficiency requirements from SLL (sometimes those are in line, but other times a choice of either or needs to be made). In turn, to establish those efficiency guidelines, hospital management, the County Pharmaceutical Unit and the Committee, have to prioritize among pharmaceuticals and determine how to provide the best possible care, given the budget constraints set by the county council. Next, SLL politicians have to prioritize how much of the budget to allocate to pharmaceuticals in comparison to other areas of healthcare. Broader speaking, they also have to determine what proportion of the total budget should be allocated to healthcare in general in comparison to other areas such as infrastructure. Lastly, politicians have to make prioritizations on tax rates and tax reductions/increases, which are influenced by normalizing practices of political ideology. On the other side of the table, pharmaceutical companies as well, have to prioritize within their exchange practices.

Important considerations are “How much should we invest in R&D vs. Marketing & Sales, is it financially viable at all to be active in and serve the Swedish market (compared to other national markets)?”

**Translations**

In order to make prioritizations and carry out negotiations, the market actors are equipped with knowledge of evaluations, translated from normalizing and representational practice. In turn, exchange practices counter-influence those in several ways.

*Exchange ➔ Normalizing: Interests.* All actors involved in the exchange practices have interests in receiving guidelines consisting of tools and rules to aid in decision-making, both in practical and ethical matters. However, in the case of cost containment of pharmaceuticals those interests are of a conflicting nature. Despite a common goal of creating better healthcare, the ideas of how to reach that goal differ significantly as different actors have divergent agendas and interests at a micro level. E.g. on the seller side, pharmaceutical companies are interested in receiving rules and tools to facilitate easy access to new innovations. While on the buyer side, physicians and hospitals request ways of how to better prioritize and evaluate between new and old pharmaceuticals.

*Exchange ➔ Representational: Measurements.* In the translations between exchange and representational, it is clear that an imbalance exists in what is being measured and what is not. Within the healthcare system a tendency exists (brought up by several interviewees), that market actors tend to focus on indicators with the best measurability and thus only evaluate what “the light of the lamp” sees. By its nature, it is easier to control budgets by cutting costs than influencing the incomes. For instance, within health economic evaluations, the cost of a pharmaceutical is much easier to measure than the social benefits. Further, due to the substantial amount of data to be measured and the great amount of people involved at different levels, measurements are characterized by an “information overload”, meaning that the volume of information makes obtaining an overview difficult.

*In comparison, exchange practices within medtech*

The activities occurring within exchange practices of pharmaceuticals and medtech have some overall commonalities, e.g. similar actors are involved in the activities and the main activities taking place surround negotiations and prioritizations.

However, a main difference can be found in the measurements i.e. in the definition of the product in exchange. Where medtech products can be treated as both investments (e.g. x-ray machines) or consumables (e.g. insulin pumps) pharmaceuticals are, with few exceptions, treated as a consumable and thus a direct cost. The broad product portfolio included in medtech makes it hard to state one clear definition of what should be cost contained. In addition, the blurred line between medtech and other treatments adds additional complexity to the problem.
Further, the less unified definition of what a medtech product is makes it more difficult for actors involved in exchange practices to find one common structure of the market. This is especially notable on the buyer side – for pharmaceuticals, buyers can derive input from successful negotiations while every medtech procurement is essentially different. Buyers need to procure products, which by nature have widely different characteristics (e.g. operational robots and patches). Arguably, better knowledge and routines in negotiation processes leads to a better negotiation position.

In contrast to pharmaceuticals, interests among market actors are more concordant regarding cost containment of medtech. The actors agree that processes need to be more standardized with regards to where and how exchange practices occur. Arguably, this is a result of the limited progress that has been made in structuring cost containments processes for medtech products. Consequently, the interests for guidelines are more characterized by a need to receive any sort of guidelines at all. As for pharmaceuticals, the actors involved in exchange activities are more in the known and thus have more specific interests and requirements of how guidelines should be.

5.1.2 Normalizing practice

Normalizing practices serve to establish normative objectives by establishing guidelines on how a market should be shaped. In terms of cost containment, these practices are reformed by authorities, by best practices in the market as well as norms and standards developed by several institutional actors. The main normalizing activities are divided into three areas: legislation, budgeting and recommendations.

*Market actors involved in normalizing activities*

- State and legislators
- County council politicians and officials (SLL)
- TLV
- LIF
- SKL (NT-council)
- Patient organizations

*Normalizing activities*

*The legislation activities* cover a wide range of areas regarding public procurement, patient safety etc., all of which are interrelated and affect cost containment. While legislators perform the actual activity of establishing laws, legislators actively seek knowledge, opinions and expertise from various actors, such as pharmaceutical companies (through LIF), patients (through patient organizations), physicians and the state (through TLV, SNS and Vårdanalys). In addition, these actors have influential power over the normalizing practices through their public opinion building.

*In normalizing practices connected to budgeting*, SLL’s Pharmaceutical Unit and Committee - in discussion with hospital representatives - decide upon the budget allocation and priority of pharmaceuticals. Budgets are determined based on prediction of need and the result of price-negotiations, as well as prioritizations made between pharmaceuticals and other hospital expenses.

*Activities connected to recommendations* are aimed at providing actors within exchange practices guidelines on how to act. One example is in the creation of SLL’s Wise List, a catalogue of the most effective pharmaceuticals in terms of health benefits compared to costs. Another activity is the creation of the collaboration model, formulizing standards for procedures to tackle the issue of
unequal healthcare. The development of such recommendations and standards also involve several actors, e.g. county officials, politicians and physicians/experts. In the future, it is possible that the NT-council of SKL will gain a more prominent role as these kinds of normalizing practices push exchange practices of negotiations from a regional to a national level.

**Translations**

*Normalizing ➔ Exchange: Rules and tools.* Due to the power possessed by certain actors within exchange practices, cost containment rules and tools have to be more of a recommending nature (guidelines) rather than demanding nature (laws). E.g. as every individual physician has the sole right of prescription, normalizing practices are restricted to give direct orders on which pharmaceuticals to prescribe. In addition, making national-wide laws is a complex, if not an impossible task as the characteristics of situations where these laws should apply vary from time to another. The best course of action needs to be decided from case to case, as the same facts and problems do not apply each time.

*Normalizing ➔ Representational: Ways of measurements.* The complexity in the issue of balancing cost containment can be observed in the demand of a wide range of methods in which the markets performativity can be evaluated. This takes form in a plethora of evaluation-methods described in reports and studies to act as support when formulating laws, regulations and standards. For instance, the usage of health economical evaluations arose and became an important tool as the state and counties had to find ways to prioritize between pharmaceuticals due to financial constraints.

**In comparison, normalizing practices for medtech**

In terms of normalizing practices there are some key differences compared to medtech. Firstly, there are fewer market actors involved in legislating, recommending and budgeting within the market for medtech. Secondly, while the national initiatives for cost containment are now growing also for medtech (e.g. TLV’s mission to do health economical evaluate of medtech, NT-councils decision to expand and include medtech), there is still only limited interest amongst market actors on a regional level to receive rules and tools to facilitate the exchange of medtech products. Lastly, when it comes to medtech products, the market actors’ have lower knowledge of what sort of information to request, as a result, the demand for descriptions of market performativity is limited.

**5.1.3 Representational practice**

Representational practices refer to activities that depict the market and how it works. This includes the gathering and analysis of data and statistics e.g. for usage within a company or for journalists to report on the state of the market. In the case of cost containment, these activities analyze current exchange practices in an effort to evaluate how and how well the market is performing with regards to finding the right balance of cost containment.

*Market actors involved in representational activities:*

- TLV
- MPA and EMA
- Other state organizations of control and analysis (Vårdanalys, SNS, SCB)
- SKL (NT-council)
- Interest organizations (Patient organizations, LIF etc.)
- Pharmaceutical companies
- Physicians and scientists
- Media
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**Representational activities**

Several market actors are involved in performing representational practices connected to cost containment of pharmaceuticals. The research, reports and statements made by the actors mentioned above all provide a constant stream of information and opinions, which have an influence on normalizing and exchange practices. Representational activities describe the functionality of a pharmaceutical and evaluate them both from a medical as well as an economical perspective. Studies from pharmaceutical companies’ clinical trials or health economic evaluations conducted by TLV are some examples. Also, the MPA and EMA serve an important role by defining pharmaceuticals and their usage areas, thereby effectively defining the market.

Within representational activities, media plays a substantial role. Firstly, through investigative journalism, media researches and investigates the conditions and situation e.g. for accessibility of pharmaceuticals in different hospitals. With their coverage, they create and direct attention towards areas where the market is faulty and drive change and pressure market actors within both normalizing and exchange practices to act. Secondly, market actors such as pharmaceutical companies (by themselves or through LIF), patients (through patient associations) and the state (through TLV, Vårdanalys, Socialstyrelsen etc.) can spread their perception of the market through public opinion building and presentations of their own reports depicting the market.

**Translations**

*Representational à Exchange: Results.* One important factor of influence is that the results provided by representational practices frequently depicture and tell contradicting stories. Compared to a stock market, where the new market structure is displayed instantly when a trade is performed, there is no single institution or actor in charge of representational practices of pharmaceuticals. Rather, each actor has their own opinion and perspective of both the problem and the solution. Thus, many different images are translated, which has negative effects on the ability to improve market performativity. For example, a slower development of the pharmaceutical cost compared to the hospital cost as a whole can be seen as a positive development by certain actors as it would seem as the current market structure is working to contain costs. While others would see this as the market malfunctions as fewer new pharmaceuticals can enter the market. Consequently, market actors will bring their own representational results to negotiations within exchange practices, causing difficulties to find agreements as all involved actors have a different view on the market situation.

*Representational à Normalizing: Descriptions.* Within cost containment of pharmaceuticals there is a strong connection between normalizing and representational practices as normalizing practices dictates and specifies how cost containment measures should be depicted. E.g. in defining the usage of pharmaceuticals, MPA and EMA have strict requirements on how to evaluate. Also, TLV uses one specific process of performing health economic evaluations, and SLL has clear guidelines in how to assess new pharmaceuticals before procuring them. On the contrary, actors performing normalizing practices are highly dependent on the descriptions made by representational activities to understand how the current exchange practices are functioning in order to be able to make assessments when it comes to improvement.

**In comparison, representational practices for medtech**

Similar to the normalizing practices, the representational practices between medtech and pharmaceuticals differ greatly. For instance, as the conducted media analysis showed, medtech receives disproportionally less media attention compared to its market size and in comparison to pharmaceuticals. This can be explained by a different historical background, the broad definition and lack of understanding of what medtech is. Also, by the lack of established structures regarding
evaluation of medtech products. As medtech products are not reported in separate cost units, they are easily overlooked by journalists investigating costs within the healthcare system. In addition, as there are fewer established procedures of how to measure medtech it becomes harder to determine a reasonable price or quantity needed for a product. Conversely this also has affected hospitals ability to structure medtech under one cost unit. Medtech products are therefore less visible when analyzing cost structures, making the right prioritizations more difficult to determine compared to pharmaceuticals.

5.1.4 Conclusion (1/3)
Cost containment of pharmaceuticals is characterized by a high level of activity in all three practices, where exchange practices surround decision-making of negotiation and prioritization, where normalizing focus on legislation, budgeting and recommendations and where representational activities constantly provide updated (and often ambiguous) pictures of the market situation. Particularly interesting is the involvement of several actors within several practices, which creates plurality and ambiguousness within the practices as well as tensions in the translations. Cost containment of medtech on the other hand is characterized by lower activity-level, with fewer actors involved, and less knowledge established in the field. This leads to comparably more consensus within the practices and less tensions in its translations.

5.2 The wicked issue of balanced cost containment in a market context
Drawing conclusions on the above analysis the following section examines how several different aspects of wickedness becomes visible. Foremost, this section analyzes how wicked issues are affected by trying to be resolved in a market context.

The existence of a discrepancy representing a wicked issue can be explained in numerous ways
The process of cost containment involve numerous of market actors who all have different ideas about what the problem is and what its causes are. In the case of cost containment, some interviewees e.g. Thyberg and Wallenström believe that the system works fairly well, however others such as e.g. Antonov, Laestadius and Lönnberg see several flaws (of which several are presented above). In the nature of a wicked issue, ideas and problem definitions will vary widely, as Rittel and Webber explain it: “everybody picks that explanation of a discrepancy which fits his intentions best and which conforms to the action-prospects that are available to him.” In this study, these discrepancies are created both by the variety of different market actors involved, but also by the amount of different opinions of people within the respective organizations, making the wicked problem even more wicked.

In a market context: The theory of wicked issues says: “the choice of explanation determines the nature of the problem’s resolution.” However, in a market context such as above, it is unclear whose explanation should be accepted as the truth. As seen in the representational practice the range of interpretations is widespread as a result of e.g. actors being on different sides of the system or as a result of different organizational agendas and interests. In the case of finding an appropriate level of cost containment, the market actors’ agendas vary to a degree that creates diversity rather than unity in finding better solutions to the issue.

Solutions to wicked issues are not true or false, but better or worse. Nor does it have any stopping rule. Finding an optimal solution to the level of cost containment is a difficult near to impossible task, as several actors with various interests influence the process on a national, regional and local level. The market actors will always have a subjective view on what the best level of cost containment is. For instance, while most agree that too low levels of control leads to wasteful and non-
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rational investments, there is a high discrepancy of what market actors consider to be too high levels of cost containment. In addition, as no stopping rule exists, there will never be a definite time where a definite solution can be found.

In a market context: As Rittel and Webber (1973) explain it: “normally, many parties are equally equipped, interested and/or entitled to judge the solutions, although none has the power to set formal decision rules to determine correctness.” This is true for the above case; however, what makes it even more complex is that within an organization – even though no one can decide what is right and wrong – the existence of a hierarchy will lead to decision-making and progress. E.g. within an organization, the CEO or the Board of Directors have the power and mandate to choose a direction of action. However, in the case of finding the appropriate level of cost containment no such clear order exists, as the healthcare system is characterized by many equally strong and important actors. Thus, each individual actor involved in the system has only limited possibility to influence market performativity by itself.

Also, when wicked issues are being solved within an organization a solution is eventually chosen when the planner runs out of “time, money or patience”. In the case of finding the appropriate level of costs containment, however, there are fewer deadlines of that kind. In fact, cost containment is an ongoing process influenced by different practices and their translations. Once one actor within e.g. exchange practices makes a move, the reaction will occur somewhere else in the system, starting a chain reaction. As the analysis of market practice above showed, the market actors’ attempts to find the appropriate level of cost containment is characterized by the ongoing translations between the market practices and as there is no shared and defined agreement on what the appropriate level of cost containment should be, the process can be seen as infinite.

Every wicked issue is essentially unique
As the overall healthcare system of Sweden differs substantially from other nations, only partial solutions of cost containment can be drawn from international best-practices. It is also not possible to completely adapt a system of cost containment from another healthcare industry e.g. medtech or vice versa, as the nature of the product, the buying processes as well as the need for the service differ.

In a market context: “There are no classes of wicked problems in the sense that principles of solutions can be developed to fit all members of a class.” (Rittel & Webber, 1973) Thus, the uniqueness of the problem forces market actors to come up with unique solutions. In the case of finding the appropriate level of cost containment in Sweden, part of this problem lies in the fact that the market itself is divided fragmented playing-field without one national system. Therefore, individual solutions need to be found at every level (national, regional and local), within every one of the 21 councils as well as for every pharmaceutical category (OTC, prescription, in-patient). For instance, as the market situation and the regional healthcare system of Dalarna differs to that of Stockholm, the same solution cannot apply. Moreover, when regional and local actors make decisions based on their situation it also has a direct effect on the national system, outside of their control.

Every wicked issue can be considered to be a symptom of another issue
Today’s issue of balancing cost containment can be derived from the wicked issue of how to get tax-financed budgets to cover all expenses to care for an aging and growing population. Austerity in the pharmaceutical budget is arguably such a symptom and thus led to the increased focus on cost containment. In addition, the interviewees also identified that several different issues within Swedish healthcare are tangled together e.g. unequal care, sub-optimizations and inefficient incentive systems, all affecting and influencing each other.
In a market context: Despite the entangled nature of the issues, many of the issues mentioned are today managed as separate issues and tried to be solved as tame problems. However, in the case of a market setting, the problem is not only that actors try to solve the issues separately, but also that the problem is tried to be solved in different areas of the market simultaneously. Contrary to the classic view on the conceptual model of markets and their practices presented by Kjellberg and Helgesson (2007), where a market actor typically acts within one practice and where a clear division of labor is established, this study exemplifies a situation where market actors are involved in several different practices when trying to solve a wicked issue. For instance, SLL and its Pharmaceutical Unit act in both normalizing and exchange practices, as do LIF and TLV, who are involved in all three practices. Thus, the issue is not only that the problem is entangled in several other healthcare issues, but also that the tensions in the translations arise from tensions within the practices, clouding market actor’s ability to analyze the market, thereby adding to the wickedness of the issue.

**Consequences of resolving wicked issues in market contexts**

Trying to resolve a wicked issue in a market context has consequences, whereas the consequences in the case above are characterized by:

- **The amount of information to process is extraordinary high.** Due to the vast amount of information; data analysis and information gathering become a wicked issue in itself. To grip the extent of the situation, information need to be gathered from e.g. national, regional and local level and then processed. Analyzing it becomes difficult as well as distributing and understanding it.

- **Guidelines and recommendations become vague.** Since the market is so broad, and laws/regulations need to be applicable to so many situations and processes, the market is forced to settle for broad definitions and vague recommendations rather than straight decisions. This suggests that, in the end, the market still has to rely on individual interpretation, which leads to uncertainty.

- **Increased risk of conflicts and finger pointing when there is a lack of common understanding.** As seen in the case above, the lack of a common ground influences the performativity of the market causing market actors to make sub-optimized decision.

**5.2.1 Conclusion (2/3)**

Finding the appropriate level of cost containment for pharmaceuticals within the healthcare system is clearly a wicked issue; unique in its nature and without a definite ending, where several market actors have widely spread ideas of what both the problem and the solution is. In addition, in the case of finding the appropriate level of cost containment, the issue is surrounded by an additional level of complexity, as both the problem and the solution lies in the market context. Resolving a wicked issue in a market setting, compared to an organizational context, indicates a higher number of actors involved with substantially more and varied opinions. There is also no clear decision-maker with natural decision power. Adding to the complexity is the market actors’ attempt to solve the issue within several different practices simultaneously. This leads to vast amount of market information to process causing vague guidelines and recommendations as well as increased risks for conflicts.

**5.3 How the wicked issue is treated differently between pharmaceuticals and medtech**

The nature of wicked issues suggests that deciding on what level of cost containment is appropriate is difficult to determine. However, drawing on the previous market analysis of the differences in market
practices between pharmaceuticals and medtech, the disproportioned level of control can be explained. The analysis below describes the main findings.

**Historical differences in domestication of the wicked issue help explain the differences in today’s levels of cost containment.**

A more established tradition of evaluating pharmaceuticals has contributed to a more rigid structure and more knowledge amongst today’s decision-makers. The rising pharmaceutical costs during the 1990’s created an interest and urgent need for normalizing practices to produce more rules and tools. As a result, new institutions were established to provide better guidelines on how to handle pharmaceuticals. Independent organizations like TLV, or in-house units like the pharmaceutical unit at SLL, were commissioned to perform health economic evaluations in order to determine the most cost efficient pharmaceuticals. In the light of wicked issues, these actions can be seen as actors’ attempts to domesticate the wicked issue. Over the years, the introductions of new processes, new regulations and more involved actors has proven successful in terms of controlling costs, however arguably, the increased rigidity has created new issues in other parts of the system. The investments made by the market actors to contain costs have thus not necessarily led to a more efficient market, but only changed the nature of the issue. In that sense, wicked issues are never constant but rather constantly changing form as market actors try to tame them.

On the contrary, all interviewees agree, that there have been fewer attempts historically of domesticating costs for medtech. Subsequently, there has also been fewer cost containing incentives and initiatives to structure the evaluation of medtech products. As an example, even today county councils generally have no routine to account for medtech costs as separate budget post. The counties and hospitals have, up until now, also not requested guidelines for prioritization and procurements of medtech such as the “Wise list”. Thus, the lower historical interest in cost containment for medtech products have led to less established procedures, lower knowledge, fewer regulations and fewer established systems of measurements.

**As a consequence, today the possibility to measure, quantify and track pharmaceuticals is higher compared to medtech.** Firstly, it is easier to measure the effect on pharmaceuticals than medtech, as it is easier to make clinical studies. With pharmaceuticals, the respective drug can be isolated in head-to-head, randomized, placebo-adjusted studies where effect can be measured with high accuracy. An interesting observation is that pharmaceutical companies themselves have contributed to the establishment of sophisticated tools for evaluation as they, over the years, have become better and better in clinical trials and finding evidence in smaller patient groups.

On the contrary, it is argued to be more difficult to evaluate medtech products. Firstly, there are no limitations of measurable factors that influence outcome. This makes it difficult to find clear evidence on the product’s effectiveness. E.g. the result of gastrectomy surgery with a robot will vary depending on the experience and skill of the physician, the number of patients treated, the time allocated to gastrectomy surgeries etc. Secondly, finding a unified process of evaluating medtech has proven to be difficult, as the product line for medtech is much more varied than for pharmaceuticals. For instance, larger differences are found between e.g. patches, syringes and X-rays than between cancer and diabetic drugs.

**Furthermore, history can explain differences in perception and how it affects cost containment.** As the pharmaceutical industry is an established actor in all three areas of practice, more disagreements have been identified within the market setting that have influenced perception of pharmaceuticals and the industry. This can best be illustrated as a process of action and re-action
where no market actor is right or wrong. However, as cost containment on pharmaceuticals intensified, pharmaceutical companies saw their return on investments diminish and had to find new ways to regain profit levels. As most common pharmaceuticals were dominated by generics and characterized by low profit margins, pharmaceutical companies adjusted their strategy to fit with the new demands e.g. searched for evidence of effect in smaller clinical test samples. As soon as some of these products did not live up to expectations, perception of pharmaceutical companies turned negative and control was yet again strengthened to make sure only effective pharmaceuticals could reach the market. Again, this matches well with the notion of wicked issues in a market context, were the wicked issue is constantly re-shaped as market actors try to tame it.

For medical technology on the other hand, there has historically been less conflict between market actors, which can explain the more positive perception identified in the empirical findings. Compared to pharmaceuticals, where agendas and opinions widely differ and the negotiations have the characteristics of zero-sum-games, the medtech industries is currently characterized by a common agenda of finding better solutions to the evaluation of medtech products. Arguably, this leads to less of head-to-head conflicts or public debates as market actors do not need to defend their positions. In terms of market practices, the current market performativity is therefore higher for medtech than for pharmaceuticals. However, as noted, if market actor’s practices are constantly re-shaping the wicked issue, market performativity for medtech also risks decreasing. Swedish media has recently directed attention towards e.g. the costs of surgery robots, while TLV has initiated health economic evaluations of selected medtech products, indicating an increase of activity in all three market practices. As the interest for evaluating medtech products increases, the risks for conflict among market actors will also increase.

5.3.1 Conclusion (3/3)
Clear differences in cost containment have been found in the analysis. The reason why pharmaceuticals are more cost contained than e.g. medical technology can be explained largely in the historical differences of more extensive investments to contain rising pharmaceutical costs. Thus, the lower historical interest in cost containment of medtech has led to less established procedures, lower knowledge and fewer regulations. Consequently, methods for measuring, quantifying and tracking pharmaceuticals are far more developed compared to medtech. Furthermore, cost-containing differences can be explained by different perceptions, which have been created in the two markets over time.
6. CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusions drawn from the analysis above. Moreover, deriving from the analysis, the second section aims to provide market actors with recommendations on how to act on the wicked issues of balancing cost containment of pharmaceuticals.

6.1 Summary of findings; how to resolve the wicked issue of cost containment in a market setting

The research questions aimed to explore in this study were i) how are pharmaceuticals being cost contained within Swedish healthcare? ii) are they disproportionally cost contained compared to other costs areas of healthcare? iii) if so, why? By analyzing the general question of “How is a wicked issue resolved in a market setting?” through the lens of wicked issues and the theory of markets and their practices, this study made the following findings:

Deciding upon the appropriate level of cost containment for pharmaceuticals within the Swedish healthcare system is clearly a wicked issue; unique in its nature and without a definite ending, where several market actors have widely spread ideas of what both the problem and the solution is. The process of finding the appropriate level of cost containment is surrounded by an additional level of complexity, as both the problem and the solution lies in the market context. Resolving a wicked issue in a market setting compared to an organizational context, indicates a higher number of actors involved with substantially more and varied opinions. There is also no decision-maker with natural decision power. Adding to the complexity is that market actors attempt to solve the issue within several different practices simultaneously. This leads to an extraordinary amount of market information to process, vague guidelines and recommendations, as well as increased risk of conflicts.

6.1.1 How are pharmaceuticals being cost contained within Swedish healthcare?

Cost containment of pharmaceuticals is characterized by a high level of activity in all three practices, where exchange practices surround decision-making of negotiation and prioritization, where normalizing focus on legislations, budgeting and recommendations, and where representational activities provides updated (and often ambiguous pictures) of the market situation. Particularly interesting is the involvement of several actors within several practices, which creates plurality and ambiguousness within the practices as well as tensions in the translations.

6.1.2 Are they disproportionally cost contained compared to other costs areas of healthcare?

Comparing pharmaceuticals and medtech products the study found clear indications of a disproportional cost containment of pharmaceuticals.

Several interviewees believed that pharmaceuticals were cost contained disproportionally more; identifying both rational (e.g. best possible care for tax-money) and irrational (e.g. enhanced control due to perception) reasons behind. The disproportionality was also displayed in the organizational structure of several market actors. In actual costs, the study showed that medtech products (≈ 20 billion SEK) comprise more than half the total annual cost for pharmaceuticals (≈36 billion SEK) within the Swedish healthcare system. Simultaneously, TLV has thee pharmaceutical units compared to one medtech unit. SLL has both a pharmaceutical unit and committee but no equivalent to medtech. Within SKL, the collaboration model exists to jointly evaluate and procure pharmaceuticals and while there is a plan to include a similar structure for medtech in the future, no equivalence to that of pharmaceuticals exists today. Lastly, the conducted media search showed that media reporting on
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medtech was 91% less than for pharmaceuticals indicating another disproportionality of focus. This study therefore argues that pharmaceuticals are more cost contained compared to medtech. Further research needs to be conducted to see if similar disproportionalities exist for other cost areas of healthcare such as personnel or facilities.

However, it is important to note that disproportionality in resources allocation do not necessarily have to be seen as inappropriate, and that resources equally allocated to cost containment for all cost areas of healthcare must not be the correct solution. Again, as the characteristics of wicked issue notions, there are no right or wrong solutions only better or worse.

6.1.3 If so, why?
The study identified that the reason why pharmaceuticals are more cost contained than e.g. medical technology can be explained largely in the historical differences of more extensive investments to contain rises in pharmaceutical costs. Such investments were not made for medtech. Thus, the lower historical interest in cost containment of medtech has led to less established procedures, lower knowledge and fewer regulations. Consequently, measuring, quantifying and tracking pharmaceuticals are far more developed compared to medtech. Furthermore, cost-containing differences can be explained by different perceptions, which have been created in the two market settings.

6.2 Recommendations

6.2.1 What needs to be done?
All market actors need to become aware that finding the appropriate level of cost containment is a wicked issue. Thus, the issue cannot be treated with linear problem-solving models as linear solution will not match the changing characteristics of the wicked issue. The wicked issue is constantly evolving, influenced both by other areas within healthcare and actors involved in the system. Therefore, it is suggested, that all types of imposed solutions need to be conceded from two perspectives i) a holistic perspective and ii) a multi-actor perspective, in order to handle the wicked issue and improve market performativity.

• Firstly, Vartiainen (2003) argues that actors always should aim at a holistic perspective. As incentive systems and cost containment structures are all interlinked, it is not possible to treat them as separate issues. Market actors therefore need to consider the consequences of their own actions and the effect on other areas of healthcare. Thus, attention needs to be directed towards scanning and understanding the surrounding environment and parallel processes.

• Secondly, Clarke and Stewarts (2003) argue that wicked issues must be resolved by “working through people”. As stated in the analysis above, both the solution and the problem lies in actions and interactions amongst the market actors, which is why neither individual market actors alone, nor market actors in conflict will find solutions. As seen in the theory of wicked issues, finger pointing instead of learning from mistakes is common. Consequently, if market actors are arguing and undermining each other’s actions, finding a solution will be difficult. It is therefore recommended, that market actors top priority should be to increase cooperation. This also aligns with this study’s definition of market performativity, where it can be argued that increased cooperation leads to more streamlined division of activity and thus increased market performativity.

6.2.2 How should this be done?
Involved market actors should:

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Find a structure with natural meeting points on a regular basis. As solutions only can be found through better interaction, more coordination through forums and meeting points among market actors is advisable. This should preferably happen within several different areas, both between physicians and the industry, between the industry and decision-makers, and between decision-makers on different levels and within different geographical areas. It is of highest importance that these meetings occur on a regular basis to capture and update involved actors on the changes in the market. However, already today, market actors express a feeling of having to attend too many meetings. The study therefore emphasizes that the meetings should be organized as a natural part of a workweek and not external events. Also, a neutral coordinator with a holistic perspective is needed. Thus, it is suggested that e.g. the National Board of Health and Welfare (Socialstyrelsen) should be mandated with the task to facilitate increased cooperation and conduct regular meetings.

Improve market performativity by decreasing the “noise” in the translations
High market performativity in finding an appropriate level of cost containment can only be achieved through a more streamlined division of activity and a better division of responsibility between practices, as this enables a better flow of market translations. On this notion, it needs to be questioned whether market actors have to participate in several market practices simultaneously.

Within representational practices, market actors have to agree on a common way to analyze the market and then base their actions upon that depiction. On the downside, the depictions might not mirror all nuances and opinions in the market, but it at least creates a stable foundation of information for actors within normalizing and exchange practices to act upon. The collaboration on the Socialstyrelsen’s report on pharmaceuticals is a good example of how such collaborations can function and how representational practices can be accepted by all market actors. (Socialstyrelsen, 2015)

Within exchange practices, more emphasis should be put to develop a common system of procurement for all counties. The trial of three-part negotiations is a good step in the direction of improving market performativity. Lastly, within normalizing practices there are currently few indications of collaboration and a common view among actors. For instance, one can contemplate if e.g. media and public debate is a constructive tool or if it rather increases the fragmentation of the market, fuels tensions and steers the discussion away from the overall goal. Rather, market actors should find a better medium where discussion can be held, e.g. on how health economic evaluations on pharmaceuticals should be conducted or how to improve the life-science sector and innovation in the Swedish healthcare system.

Constantly and jointly evaluate decisions
The wickedness of finding the appropriate level of cost containment predicts that there are no solutions that work in every context. Therefore, any attempts to apply fixed solutions will only lead to lock-in effect without improvements. Rather, it is recommended that handling wicked issues should be seen as a process requiring constant evaluation of the market performativity. One suggestion on how to conduct such evaluation relates to representational practices, where regular surveys among market actors on whether recent decision have made their situation better or worse, could be performed. This could help to find better solutions and pareto-improvements among all actors. Given the size and complexity of the issue, it is difficult to determine how such a system might work and the idea of surveys might seem unrealistic and trivial. However, it has also, to the authors’ knowledge, not been attempted before and should therefore be considered.
7. DISCUSSION

In this chapter, the contribution in relation to the research questions as well as the managerial implications of the study are presented, along with the limitations of the study. Finally, this study is concluded by suggestions for future research.

7.1 Contribution

This study set out to investigate the pharmaceutical industry’s sentiment of being disproportionally cost contained. Both the healthcare system as well as cost containment within healthcare are areas that have been widely investigated in practice. However, to the authors’ knowledge, few studies have been conducted where knowledge of the market actors’ involvement in the shaping and re-shaping of the problem and the solution has been drawn from a theoretical perspective.

By applying a theoretical framework where the theories of wicked issues are combined and understood in relation to theories of markets and their practices, three main contributions to the healthcare management field are obtained:

- Firstly, an increased understanding of why finding the appropriate level of cost containment is a problematic and complex issue.
- Secondly, a comprehensive description of where and how cost containment occurs within the Swedish healthcare system, and how it differs between pharmaceuticals and medtech.
- Thirdly, an increased understanding how market actors own actions and interactions are part of both the issue and the solution, and the suggestion of several ways how market actors can act in order to come closer in resolving the issue of cost containment.

From a theoretical perspective, the contribution is two-folded. First, while traditional theory on wicked issues have focused on searching for solutions of a wicked issue within organizations, the case of finding the appropriate level of cost containment of pharmaceuticals within the Swedish healthcare sector exemplifies how both the problem and the solution must be found in the interactions among market actors. Second, the study also exemplifies a limitation in the model of markets and their practices. As stated in the traditional theory, conflicts and problems are solved within each practice with suitable mechanisms. However, this study shows how those market mechanisms are insufficient, and market performativity affected, when several market actors participate in several market practices simultaneously.

7.2 Managerial implications

The literature of problem-solving suggests that how well a market actor understands the problem and how well one manage to collaborate with other market actors, will correlate with the successfulness of the outcome in a problem-solving situation. Thus, given above findings, market actors might use this study as a foundation to:

- Reevaluate what problem-solving tools are needed. Today, market actors often try to find the appropriate level of cost containment and solve other healthcare issues with linear problem-solving models. Through with better knowledge of the nature of a problem, market actors can avoid using problem-solving tools that are insufficient and rather use tools better suited for the particular type of problem.
7.3 Limitations

As the framework of this paper was a single case study, the study was limited in several ways. Firstly, 16 in-depth interviews were conducted; however, a larger sample of respondents would have increased the study’s ability to depict the nuances in the market. Also, with regards to the conducted interviews, it was assumed that the interviewees represented their respective organization. However, it is important to note that discrepancies within organizations exist and that each interviewee not necessarily represented their respective organizations fully but rather provide examples of the variety of opinions and viewpoints existing in the market.

Further, as markets are constantly being re-shaped, the study is only able to provide a snapshot of the current situation, which decreases the generalizability of the results. If this study had not been limited by the time and scope, a multiple case study might have been useful to depict the changes over time. Thus, the paper and analysis above should rather be seen as a tool to help understand how markets might try to find solutions to a wicked issue.

In line with the complex nature of wicked issues, this study was to a certain degree restricted by the lack of data for comparisons. Rather than in absolute, statistical numbers, this study found support in patterns and clues provide through actors’ opinions and by analyzing organizational structures. However, over time, e.g. when the processes to evaluate medtech will be more structured, more comparable statistical data should be available.

Lastly, the case company along with the phenomenon studied, were proposed to the authors by their tutor. Therefore, as LIF’s viewpoint of the problem area was used as a foundation for this study, the authors’ objectiveness might have been colored. By carefully considering several market actors’ opinions as well as listen to external experts’ descriptions, such limitation have hopefully been offset.

7.4 Future research

Given the size and complexity of the research field, several areas could be researched further. For one, similar comparable studies should be conducted to see if pharmaceuticals are cost contained at similar disproportional levels compared to other cost areas of healthcare such as personnel or facilities.

Also, as this study has clearly stated that actors need to be aligned and collaborate to solve the issue of cost containment, further in-depth studies should be made regarding how different actors with widely separate agendas could be aligned under one common goal. In order to improve the market performativity and allow for better flow in translations, concrete studies on relevant actions, practices and collaboration models should be conducted.
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Furthermore, by applying the theory of markets and their practices to analyze market structures, other studies with the same theoretical framework can help to understand the development of other wicked issues in a market setting. For instance, areas that have been repeatedly brought up by the interviewees are issues related to insufficient incentive structures, the structure of silo-budgeting, a systematic neglect of innovations and the physicians’ problematic situation of handling administrative duties, economical evaluations as well as caring for his/her patients. In the lights of the theoretical framework presented above, knowledge and new ideas of how to solve these issues could be explored.
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