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THE EVER-CHANGING CIO PROFESSION

How the endless battle of jurisdictional control determined the past, affects the present and is shaping the future.

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Abstract

From that of the Chief Information Officer (CIO) profession's creation in the early 80's, organisations have struggled with the question of how to utilise Information Technology (IT) as a tool for competitive advantage. Since then, companies have come and gone – but the CIO has remained. During this time the CIO, also known as the head of IT, has faced constant adversity. Everything from having to fight for certain tasks, to having its entire existence questioned.

Distrust, unachievable expectations, and political actions from other professions is only a handful of reasons why the CIO has faced a high turnover rate. Other factors have been their lacking business knowledge, the profession's ambiguity and organisations perception of IT that has not aligned with the CIOs. Unlike before, more specialised professions such as the Chief Digital Officer (CDO) is an emerging challenger, waiting for the CIO to be substituted.

The purpose of this study is to investigate the CIO profession's evolutionary processes, from its origin until today, to understand the profession's future. To do this, a literature review has been conducted and the CIO profession's past was divided into two segments, before and after the millennial shift. 19 interviews were done with CIOs to understand its present state and the respondents' perceptions of the profession's future.

The data was analysed through Andrew Abbotts (1988) framework *The System of Professions*, which treats how a profession fights for jurisdictions in a larger system of professions. Four categories (*System properties*, *Cognitive strategies*, *Abstraction* and *Maintain jurisdictional control*) with underlying mechanisms were used to analyse the evolutionary process of the CIO profession and to investigate the profession's future jurisdictions.

This study shows that the CIO profession has undergone major changes. This has increased their influence as they have moved from being seen as a technician to a member of the top management team. However, this study shows that this trend will change in the future. Based upon the ambiguity of the profession, the two identified professions within the same title, the lack of professions identity and as more specialised profession are emerging, we see that the CIO's future may not be that bright after all.

Keywords: Chief Information Officer, evolutionary process, system of professions, jurisdictional control.

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1. Introduction

"It is not the strongest of species that survives, nor the most intelligent.
It is the one that is the most adaptable to change."

This quote that is representative of Charles Darwin's (1859) book *The origin of specie*s, which is often credited to him although not explicitly stated as is worded, is referring to that all living creatures need to adapt in order to survive changing environments. Unbeknownst to him, he also described how actors in the business landscape must act to survive. As the information age, the digital era or digital revolution (your choice of words) is known for its innovative ways of doing business and challenges such as digital transformation, organisations have nowadays become increasingly familiar with the age of digital Darwinism (Vollmer, 2009; Burghin, 2014).

That information technology (IT) has the potential to ameliorate how organisations operate is not breaking news, as both McFarlan (1984) and Porter & Miller (1985) highlighted in the early 80's through the increased pace of change and competitive advantages created by IT. That has not slowed down; rather the opposite, as challenges with technologies regarding big data (Chen & Zhang, 2014; Yang et al, 2017), blockchain (Zheng et al. 2016; Mendling et al, 2018) artificial intelligence (Marr, 2017) and deep learning (Chen & Lin, 2014) amongst others, have been a sort of daily migraine for managers. Compared to regular headaches, staying competitive in a highly changing business environment cannot be solved with either paracetamol or ibuprofen – the real deal is knowledge. A certain kind of knowledge that throughout history has been associated with the profession of the Chief Information Officer (CIO) – which has gained extensive amount of attention within research areas such as management information system (MIS) and IT governance.

The CIO originated in the early 80's as the manager who oversaw the MIS in organisations (Ives & Ison, 1981), and has its roots in being responsible for data processing, telecommunications and system development (Gruber & Synnott, 1981 as read in Benjamin et al, 1985). CIOs influence increased as the perception of IT changed from being a support function to a strategic resource (Gupta, 1991). CIOs become communicative executives in the top management team (TMT) that integrated IT and business to gain competitive advantage (Polansky et al, 2004; Reinhard, 2012). The profession is however clouded in ambiguity, as it has been difficult for others to know exactly what a CIO does, although it has been attempted several times (Rockart et al, 1982; Benjamin et al, 1985; Grover et al, 1993; Romanczuk & Pemberton, 1997; Polansky et al, 2004; Preston et al, 2008:1; Peppard, 2010). Krotov (2015) further states that other executive professions do not trust CIOs, due to CIOs insufficient relationship skills, but also due to other professions inadequate IT knowledge.

Gerth & Peppard (2016) state that it is the CIO who is in charge of not only an organisations IT function, but their digitalisation process as well. Meanwhile an emerging profession, the Chief Digital Officer, has gained traction the last couple of years. Researchers view it as a complement to the CIO (Singh & Hess, 2017; Tumas, Berente & Brocke, 2017), but at the same time there has been cases when former CIOs have become CDOs (Lindström, 2016; Heymowska, 2017). Even the Swedish government announced their first CDO in 2018 (Lindström, 2018). The CDO's emergence can be viewed as an indication of that organisations must modernise how they perform business (Desai, 2016). Concerns regarding how professions must reskill due to the digitalisation and the increased reliance on IT has been noted (Kothapalli, 2017; Illanes et al., 2018; Owen, 2018). There is however a gap in research regarding how this change has affected executive professions historically. This includes executives within the IT discipline and the effects on IT governance which can be defined as "*specifying the decision rights and accountability framework to encourage desirable behavior in using IT"* (Weill & Ross, 2004 p.2). This in combination with that there exist calls for research surrounding the CIO professions current and future state (Cetindamar, 2016; Reisman, 2018) lead us to contribute with knowledge within profession research and within the research fields of MIS and IT governance. To achieve this the purpose of this study is to investigate the CIO profession's evolutionary process to

understand how it has evolved over time and what lies ahead. With this in mind, the following research question was created:

How has and will the CIO profession evolve?

To answer this research question the CIO professions lifespan is divided into four overarching time intervals, the past (which is split into two, before and after the millennial shift), the present and the future. To do that, a literature review has been conducted as well as qualitative interviews with 19 CIOs. The theory *The System of Professions* (Abbott, 1988) has been used to analyse how the profession has evolved from its origin, towards what the future may look like.

2. Related work

This chapter is divided into two sections. First explaining how research within the area of professions has developed, followed by an overview of previous research about CIOs.

2.1 Profession research

The field of profession research has its roots in *work and occupation*, a research field within sociology (Abbott, 1993). Abbott (1993) further states that the field was split into two major themes, profession and job satisfaction, with job satisfaction being the psychological concerns of work. A profession can be defined as an occupational group with a certain skillset, a skillset that requires training and refining, it is also not something that is performed in a routine fashion, it often requires adaptation on a case per case basis (Abbott, 1988). The research branch of profession has been studied extensively throughout history. Several areas, such as teachers (Skaalvik & Skaalvik, 2011; Roness, 2011; Struyven & Van, 2014), nurses (Hoeve et al, 2014; Ferguson 2013) and psychologists (Roberts et al, 2005; Fouad & Arredondo, 2007) have been studied before. Hoeve et al. (2014) found that for nurses to increase the public opinion surrounding the profession, they must create a self-image and establish a professional identity that suits them, otherwise the profession will continue to remain ambiguous.

Professions have existed for a long time, some, as lawyers and doctors, have stood the test of time whilst others, such as railway surgeons, have disappeared or been greatly diminished (Abbott, 1988). To better understand how professions evolve or devolve, Andrew Abbott (1988) created a framework for how to understand a profession, not as a single entity, but as a part of a larger interdependent system of professions. This way of studying professions has been utilised before. Fourcade (2006) studied economists as a global profession and found that, due to the increased globalisation of economy the profession was also globalised. Through academia and scientific models, economists start to become more similar no matter their country of origin, following the most prevalent models. She further found that the profession heavily influences their surroundings and their own professional identity through their jurisdictional control.

Samuel et al. (2005) studied healthcare and medicine, from a profession standpoint. They found that professions function as a mechanism to frame otherwise abstract concepts. Although by framing a problem, professions are also in control of the problem. This was shown to be the case in their study, by creating and framing abstract concepts, professions can shield themselves from challenges by making others believe that what they say is the correct problem.

According to Abbott (1988) some professions are more threatened than others, with professions within IT being especially vulnerable. He exemplifies this through early IT professions such as low-level coders. As IT became more prevalent and more organisations wanted to utilise IT, coders became a sought-after profession. Although this profession was later replaced, not by other professions, but by technologies such as COBALT. This replacement gave birth to new professions who wrote algorithms and codes in a higher level of computer languages, whilst those who wrote machine code became a smaller expertise profession that maintained and developed the higher-level language.

2.2 The Chief Information Officer profession

Ang et al. (2015, p.2) describe IT professions as '*people that acquire, develop and manage IT resources*'. One of the IT professions that the authors describe is the CIO as an *Information Technology Manager*, and that it is a senior IT executive role that has the overall responsibility of the organisation's IT function and works towards the corporates strategic objectives.

Synnott & Gruber (1981, as read in Benjamin et al, 1985) introduced the CIO title in the early 1980's as the view of IT started to change within organisations. At this time executives wanted to leverage information to gain competitive advantages (Rockart et al, 1982). The responsibilities has gone from

focusing mainly upon technical tasks such as *"data processing, telecommunications, methods, and systems development"* (Synnott, 1981 read in Benjamin et al, 1985 p.178) to that the CIO *"needs to be a marketer, a strategist, a technologist, a leader, an organizational behaviorist — all these things"* (Kwak, 2001 p. 16). Kappelman et al. (2016) continue the latter description, as the CIO needs to contain executive leadership qualities and a high degree of business knowledge to understand the customers, suppliers, and the industry environment.

When the CIO profession emerged, it was placed under the CFO (Miller, 1983). A reoccurring theme has been how these two professions can collaborate and the importance of their relation, with focus on IT-investments (Stewart, 2000; Zorko, 2001; Palmer, 2003; Marshall, 2004; de Mesa Graziano, 2004; O'Donell et al, 2004; Murray, 2006; Healthcare Financial Management, 2006; Kirkley, 2007; Glaser & Kirby, 2009; Nussbaum, 2009; Schobel & Denford, 2012; Clayton, 2013; Van Decker & Sinnet, 2013; Naukam, 2014).

Banker et al. (2011) argue that in organisations where the CIO reports to the CFO, IT is viewed as a cost, while differentiators mostly report to the CEO. Throughout history, researchers have suggested that the CIO should report to the CEO and that their partnership is critical to utilise the CIO as a strategic resource for the organisation (Gupta, 1991; Armstrong and Sambamurthy 1999; Le & Ye, 1999; Polansky et al, 2004; Glaser, 2005; Ravichandran & Liu, 2011; Khallaf & Majdalawieh, 2012; Reinhard, 2012).

Rockart et al. (1982) suggest including the CIO in top management team (TMT) to understand the impact information flow has on business. It is first then that the CIO can prioritise strategic moves that aligns with the needs of the organisation. The benefits of having the CIO equal to other executives within strategic decision-making is to fully utilise technology and information, something that has been confirmed throughout the literature (Polansky et al, 2004; Glaser, 2005; Lawler & Finegold, 2006; Preston & Karahanna, 2009; Reinhard, 2012). Armstrong & Sambamurthy (1999) argue that the CIO brings new perspectives to the TMT on how IT can increase profit for the organisation, something that complements and gives a positive synergistic effect with the TMT.

Other executives have however had a negative attitude towards the CIO; this due to the mismatching expectations and the professions ambiguity which has made it difficult for organisations to value its potential (Romanczuk & Pemberton, 1997; Leidner & Mackay, 2007; Preston et al, 2008:2; Chun & Mooney, 2009; Banker et al, 2011; Peppard, Edwards & Lambert, 2011; Gerth & Peppard, 2016).

In recent time, more specialised professions have emerged. The Chief Information Security Officer (CISO) has seen significant growth the last decennium, with the responsibility over information security – an area that has earlier been recognised as part of the CIO (Klimosi, 2016). However, another emerging profession that may challenge the CIO is the Chief Digital Officer (CDO) (Gerth & Peppard, 2016; Horlacher & Hess, 2016). Tumas, Berente & Brocke (2017) explain that the characteristics of the CDO is to find business value through digital technologies (e.g. mobile phones and social media), understand the external costumer and to question the organisations current business model. Three domains that CDOs should focus on are digital innovation, data analytics and customer engagement (Tumas, Berente & Brocke, 2017 p. 124). They argue that the CDO complements the CIO, which are perceived by businesses as a technical specialist that cannot control more responsibilities.

Singh & Hess (2017, p.1) explain as follow what the CDO does, in comparison with other executive professions:

We define the CDO role as Orchestrating the digital transformation of a company. To understand the CDO role, it is important to distinguish CDOs from CIOs (who focus on IT strategy), chief data officers (who focus on data strategy), chief innovation officers (who focus on innovation strategy) and chief strategy officers (who focus on corporate strategy).

Even though there has been an extensive amount of research within this area, further research concerning the CIO has been requested in order to increase the understanding of its present and future state (Cetindamar, 2016; Reisman, 2018). However, even if the role of the CIO has been examined, there is limited research about the CIO profession's evolutionary process, a research gap this study aims to cover by examining the CIO profession through Abbotts (1988) framework.

3. Theoretical framework

This section will include a description of Abbotts (1988) theory *The System of Professions*. The mechanisms for jurisdictional control and how they relate to professions within the system will be presented. The chapter will be structured as follows, the first section will describe the system and how the mechanisms relate to each other. Each subsequent part will describe a category of mechanisms more thoroughly. An overview of the system will be presented in Figure 1, including each category and its underlaying mechanisms. In Table 1 a short description of each mechanism will be given.

3.1 The System of Professions

This study has used Abbotts (1988) framework *The System of Professions*. The framework consists of four categories, which are then further broken down into underlying mechanisms. The categories are as follows; *System properties*, *Cognitive strategies*, *Abstraction* and *Maintain jurisdictional control*. With this framwork, Abbott (1988) describes the system of profession as an interdependent system of professions. When he presents his framework, he looks at several professions and how they have developed over time. Some of these professions are for example; psychiatrists, accountants, and lawyers.

In the system, professions fight over jurisdictional control. As for this study, the system is limited to C-level executives. Jurisdictional control in this context refers to whom is in control of a certain tasks and has mandate over it; this can be either formal or advisory. These jurisdictions are exclusive, so that unless the jurisdiction is vacant, a profession must fight another for it. A jurisdiction can become vacant as a consequence of that the profession currently in control leaves it, or though interference (the act of interfering with another profession in an attempt to overtake a jurisdiction) by another profession.

In the system, professions use abstract knowledge in order to maintain and control jurisdictions. Abstract knowledge refers to how professions handle knowledge; a profession will use their professional knowledge and apply it to all areas and problems. Thereby using their knowledge as a tool of abstraction in order to understand problem areas and to gain jurisdictional control of them. Abbott (1988, p.36) further argues that there are two aspects of a problem, objective properties (‘*given by natural or technological imperatives’*) and subjective properties (‘*imposed by the present and past of a culture itself*’). Professional knowledge is the knowledge that fits within the scope of a profession, which they use while performing tasks.

Professions use three distinct mechanisms to obtain jurisdictional control, either through *reduction* - how professions break down problems to their objective properties to apply their own subjective properties to them. *Treatment* - how professions solve or treat a problem based on another professions diagnosis (a process professions perform in order to take information and place it in their professional knowledge). *Metaphor* - when a profession interferes with another profession by using metaphors. As the amount of jurisdictions a profession controls either increases or decreases, the profession’s abstract knowledge is affected. This phenomenon is called either *lack of content* or *positive formalism*. Once a profession is in control of jurisdictions, there are two ways for the profession to maintain these jurisdictions, either through *amalgamation* - the absorption of both jurisdictions and groups, or through *division* - dividing jurisdictions between other professions, or creating new jurisdictions and groups to control them.

The system that the profession exists within has four different properties; these properties are *connectivity*, *dominance*, *residuality* and *systemisation of professional knowledge*. All of these four influence each other to some degree; a more thorough description will be given in *3.2 System properties*.

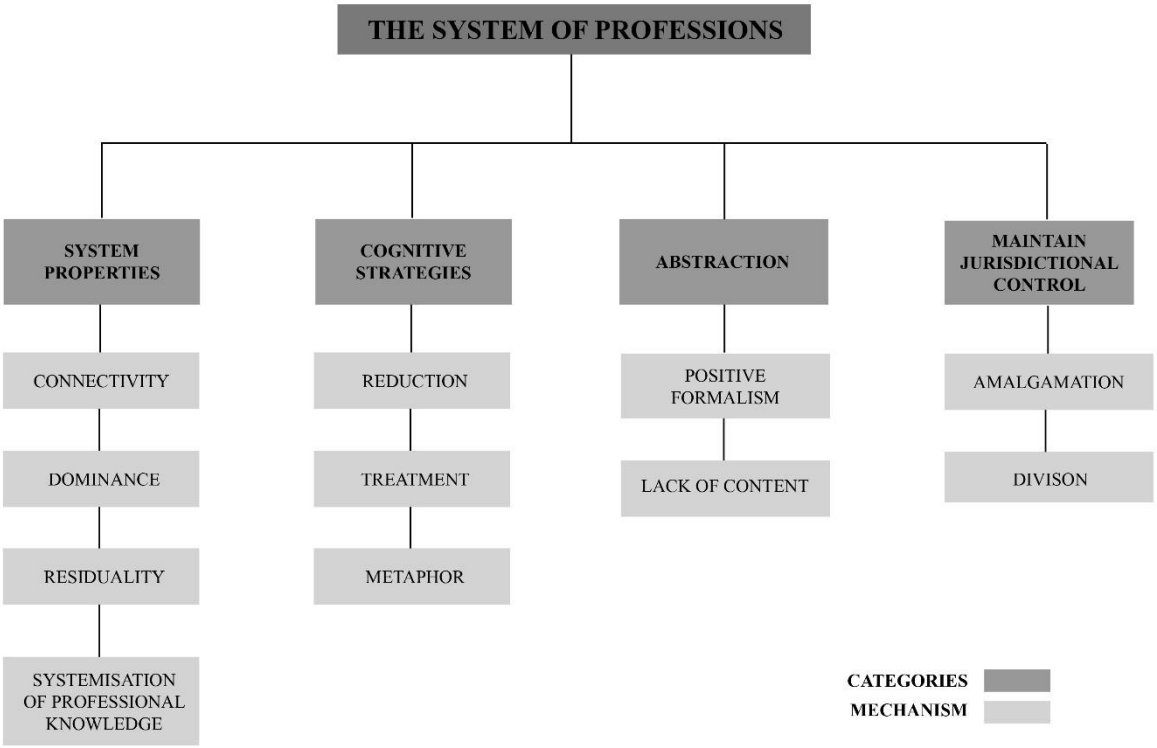

Figure 1. An overview of The System of Professions (Abbott, 1988), depicting the four categories and their underlying mechanisms. It should be noted that no mechanism is considered more important than any other, nor is any mechanisms a pre-requisite for any other, although some do affect each other.

3.2 System properties

System properties are the properties belonging to a system that influences its behaviour and how certain aspects of it can define how professions behave within the system.

The first of these properties is *connectivity*, which relates to how connected everything within an environment is, which includes a professions jurisdictions and tasks. Some tasks are naturally close to each other due to sharing objective similarities, whilst some jurisdictions are brought close to each other due to subjectivity of the tasks performed.

A system also has one or more professions fighting for *dominance* within the system. There are two types of dominance, structural (organisations and institutions) and cultural (control of dominant ideas). Structural dominance can be seen as how dominate a profession is within the origination due to its hierarchical position, whilst cultural dominance is how influential a profession is due to its ideas

The third property of the system is its *residuality*, meaning how ambivalent a profession's jurisdictional boundaries are. As dominance increases so does the amount of control over a problem a profession has. As a profession grows and gets more jurisdictions, it will be difficult to keep the abstract knowledge low and keep a high degree of control over problems, thus lending itself to attacks on their jurisdictions.

The final property of the system is the *Systemisation of professional knowledge*, this refers to how standardised processes and the professional knowledge is, which means that professions jurisdictions clarifies. In a system with a high degree of systemisation complex problems tends to be ignored (this

due to that specialised professions perform tasks, but no profession can service larger complex problem involving several of these tasks).

3.3 Cognitive strategies

Within the system, professions aim to extend their jurisdictional control. They do this through jurisdictional claims. These claims are created by professions using the following three different cognitive strategies; *reduction*, *treatment* and *metaphor.*

Reduction is an attack that aims to garner control over a task currently held by another profession by reducing it to something that is within the attacking professions jurisdictional control. This is done by replacing the attacked professions diagnosis with that of the attacking profession. An example of reduction can be found in Figure 2.

Treatment describes how a profession solves tasks. Once they have a diagnosed problem they can look for a treatment, a profession must not necessarily diagnose the problem themselves in order to find a treatment, they can use another professions diagnosis. Although this diagnosis-treatment sequence is not one-way, treatment and diagnosis can influence each other, i.e. having seen similar problems before can cause a profession to automatically diagnose it based upon previous experience. An example of treatment can be found in Figure 2.

Metaphor is a mechanism professions use in order to extend their jurisdictional control, this is done through interfering with other professions jurisdictions using metaphors. Metaphors are used to simplify the professions expert knowledge so that it can be understood by other professions.

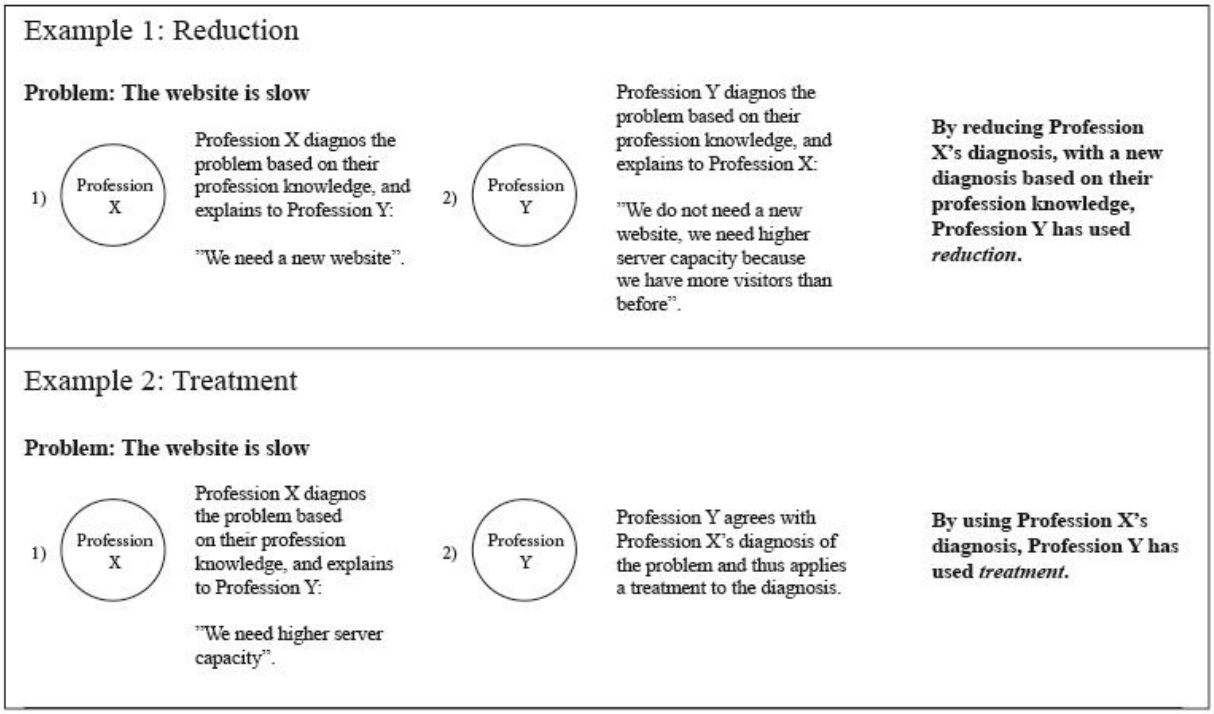

Figure 2. An illustration created by the authors, exemplifying the difference between Abbotts (1988) mechanisms reduction (top) and treatment (bottom).

3.4 Abstraction

A profession will always aim to increase their amount of jurisdictional control, although as the professions jurisdictional control grows their abstraction knowledge is increased. A high level of abstract knowledge means that the profession has a lower understanding of the jurisdiction compared to one with a lower level of abstract knowledge about it. A professions abstract knowledge is directly influenced by the number of jurisdictions they control, as they obtain more jurisdictional control, their abstract knowledge is increased, a phenomenon called *lack of content*. On the contrary, the fewer amounts of jurisdictions a profession controls, the lower their abstract knowledge is, a phenomenon called *positive formalism*.

A low level of abstraction of a jurisdiction opens it up for attack; a more specialised profession can thus overtake a jurisdiction with a weak dominant profession. This creates a pendulum situation where a given profession exists between a low level of abstraction with a few jurisdictions and a high level of abstraction with many jurisdictions. They are unable to increase one without lowering the other. The difference between *lack of content* and *positive formalism* is therefore the amount of jurisdictions a profession controls.

3.5 Maintain jurisdictional control

As previously mentioned, a professions abstract knowledge is directly influenced by their jurisdictions. In order to combat the reduction of abstraction there are two approaches a profession can take in order to maintain jurisdictional control, *amalgamation* or *division* of control. An *amalgamation* approach means that the profession chooses to incorporate parts of jurisdictions into already existing jurisdictions, merging them, whilst a *division* approach has different aspects to it. By using a division approach, a profession can either allow another profession to have advisory or formal jurisdictional control over the jurisdiction whilst remaining the dominant profession in the jurisdiction. Either that or they can keep the advisory or formal control of the jurisdiction and allow another subordinate profession access to perform the tasks within the jurisdiction.

Category	Mechanism	Description
System Properties		
	Connectivity	The professions environment and its connection to the tasks within its jurisdictional control.
	Dominance	Dominance can be either structural (organisations and institutions, e.g. hierarchical position) or cultural (control of dominant ideas).
	Residuality	The ambivalence surrounding professions jurisdictional boundaries, i.e. which tasks belongs to a professions jurisdictional control.
	Systemisation of professional knowledge	The degree of systemisation of professional knowledge.
Cognitive strategies		
	Reduction	The act of redefining another professions jurisdiction to one that better suits their own by replacing their diagnosis.
	Treatment	The act of applying one's treatment to a problem diagnosed by another profession.
	Metaphor	The act of interfering another profession through metaphors.
Abstraction		
	Positive formalism	Be in control of less jurisdiction in order to strengthen the abstract knowledge of each.
	Lack of content	Be in control of several jurisdictions at the expense of abstract knowledge of each jurisdiction.
Maintain jurisdictional control		
	Amalgamation	Merge tasks into one profession, creating a jurisdiction with all task performed by said groups.
	Division	A profession can either allow another profession to have advisory or formal jurisdictional control over the jurisdiction whilst remaining the dominant profession in the jurisdiction.

Table 1. The framework and its mechanisms presented in The System of Professions (Abbott, 1988).

4. Methodology

This chapter treats the chosen approaches and is divided into two sub studies, a literature review and an interview study, in order to fulfil the purpose of this study. The following sections describes the data collection, the method of analysis and a reflection of the chosen course of action.

4.1 Research view

The purpose of this study is to gain a deeper understanding of the evolutionary process of the CIO professions. To achieve this, the study has been split into two sub studies; a literature review and an interview study. The purpose of the literature review is to understand the professions' past, whilst interviews allow us to explore the professions current state and the practitioner's perspective on the future. To answer the study's research question, qualitative approaches were chosen to support both sub studies. The data was later analysed through Abbotts (1988) framework. A process description for how the research was conducted can be found in Figure 3. This study has aimed to achieve a high degree of credibility and generalisability by following the principles of *reliability* (if other can perform the same study with similar results) and *validity* (how accurate the study's representation of the phenomenon observed is) (Silverman, 2010:1, Silverman 2010:2). A more detailed description of both sub studies can be found in 4.2.1 Literature review (Past) and 4.2.2 Interview study (Present and future).

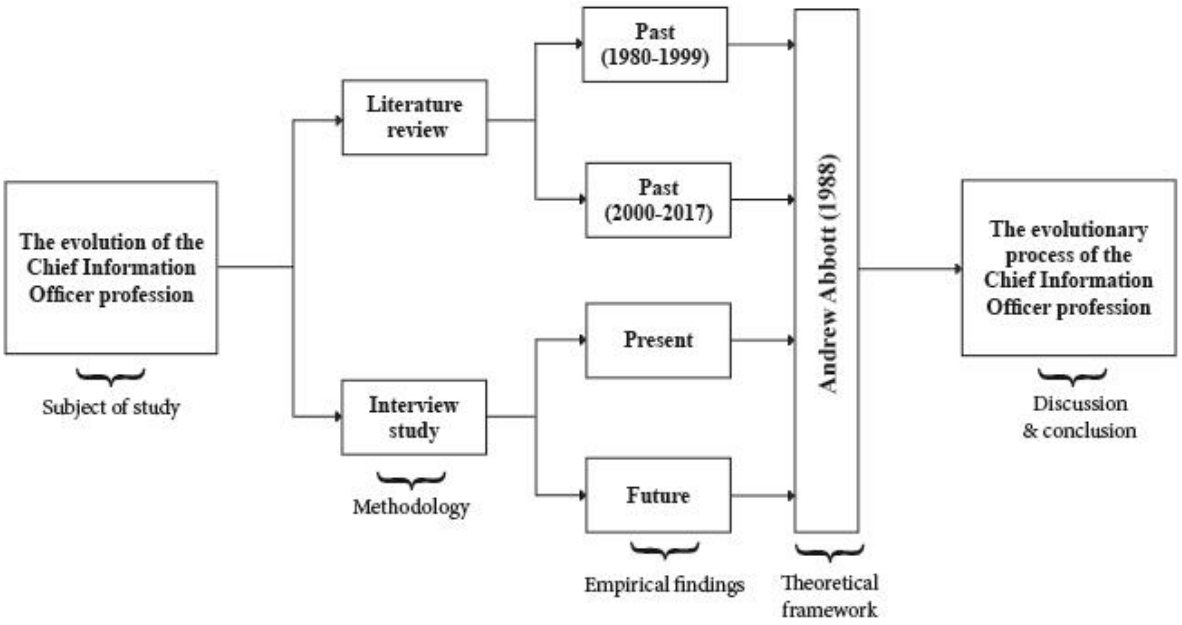

Figure 3. A process description of how the study has been performed. The conceptual object was studied through both a literature review and an interview study, the former being split into two time periods and the latter being split between present and future based on the respondent answers, the future was analysed using both the respondents answers and literature. By analysing the data through Andrew Abbotts (1988) framework a discussion could be had and a conclusion could be made.

4.2 Empirical selection & data collection

4.2.1 Literature review (Past)

A literature review was performed to understand the CIO professions past. This through previous research that has related to the CIO profession, from its origin until 2017. Secondary sources have been

used to create a foundation for this study, which path the CIO profession has taken, to better understand its current and future state. To achieve a high degree of reliability, all academic articles were peer reviewed and published in academic journals, which were found through the database Ebsco. Which journals the articles have been published in can be found in Appendix 1. Another measure that was taken to achieve a higher degree of reliability was to excluded factors that were either specific to organisations or industries, such as for example Clinical Chief Information Officer (Ruffin, 1996). The exclusion of such factors was done to gain an understanding of the CIO profession, avoiding industry or organisations specific challenges.

The selection process of published articles was done in several steps. In the beginning search terms such as "Chief Information Officer" were searched for in full text, although this returned approximately 23 000 articles, so the scope was further narrowed down. Several searches and keywords were tried in a trial and error approach until a final search was settled on. This included searching for the keywords "Chief Information Officer" or "Chief Information Officers" in abstracts until a set of 232 articles were found. In the first iteration, the result was examined and articles that were not actual research or published scientific articles, i.e. editors' comments and similar writings, were dismissed. Further iterations removed studies that did not meet the criteria to treat the CIO or their relations to other professions on an executive level. After five iterations, a grand total of 57 articles were settled upon, all of which did in one way or another treat the CIO profession.

This sub study's reliability is high due to the amount of previous research used, that the articles cover the timespan between its origin in the 1980' to 2017 and that no articles were excluded due to the journal they were published in. By doing this, the study is not affected by a single discipline's thoughts on the profession. To achieve a high degree of validity all the chosen articles are peer-reviewed, published in journals and treat the CIO profession. When considering research ethics this study references the original authors and conveys their contributions in an honest and transparent way. Although due to the amount of previous research and that it is only supposed to be used as a foundation and to create an understanding of the professions history, the articles are not presented in detail.

4.2.2 Interview study (Present and future)

To understand how CIOs perceive their profession in its present and future state, a qualitative approach was chosen and interviews were conducted. Patel & Davidsson (2003) explain that the purpose of qualitative interviews is to explore or identify characteristics and conditions in relation to a specific phenomenon, which in this study is represented by the only common thing all the respondents had – the profession they participate in, or recently participated in. The interviews were performed either by a physical meeting or by phone/Skype.

The interviews were done using a semi-structured approach to create a dialog in order to obtain a deeper understanding of the respondents' profession. This approach was chosen so that open-ended questions could be asked, with the intention of asking follow-up questions on specific aspects of the answers. Although each interview did follow a questionnaire with a set of open-ended questions, so that even if each interview was different, all the main themes were still answered. This combination of a formalised questionnaire and in-depth questions with room for follow up questions was argued to be the best suited method for this sub study to answer to the purpose of the study. The questionnaire was developed using the previous research and Abbotts (1988) theory as guidelines. This was done due to that the authors argued that if the questions were not created using previous research within the CIO field and in accordance with the framework it would not have been possible to find patterns. An effect of the semi-structured approach was that the respondents' answers guided the interviews, and this resulted in areas being explored to different depths depending on the respondent.

Due to that the respondents had limited time, a question form was sent to them after the interview asking about the respondent's age, education, and years within the profession. This was done to utilise the time during each interview in an optimal manner, allowing respondents to reason about their perspective on

the profession's current state and future development. The information gained from the question form has been divided into two tables (Table 2 & Table 3) to ensure the anonymisation of the respondents.

To gain insights about how CIOs perceive the evolution of their profession, 19 CIOs who are currently working within the profession, or have been in the last 12 months, were interviewed. The reason why former CIOs were chosen to be interviewed was because the authors argued that their experience still added value and were relevant for the purpose of this research. Because this study aims to find patterns within the profession, the respondents represent both the private and the public sector from varied industries (see Table 3), all located in Sweden. This was done in order to avoid deceptive results and patterns that could be found in a specific sector and industry. Average to large organisations were chosen due to that *'In small organizations, division of labor are too simple to support ideal interprofessional differentiation*' (Abbott, 1988, p. 67). Svenskt Näringsliv & Näringslivet Ekonomi (2010) define a medium sized company as '50 or more employees as well as a revenue less than 50 000 000 euros'. In this study we define medium sized companies as those with 50 or more employees, this because the revenue measurements can be misleading, e.g. as one of the CIOs worked within a "*non-profit organisation*" (Table 3).

All interviews were recorded and transcribed. The respondents were reached out to either through email or the social media platform LinkedIn. When reaching out to the respondents a description regarding the purpose of the study was included as a way of being transparent towards the respondents (see Appendix 2). All the respondents were given the option be anonymous; this was done to allow the respondents to answer freely. The same form regarding the anonymity also described the purpose of the study and that the collected data only will be used in scientific research (see Appendix 3).

Education	**Nr.**	**Education**	**Nr.**	**Education**	**Nr.**
System scientist	3	Business administration	3	IT & Computer Technology	3
Economics and AI	1	Economics and IT	1	HR and IT	1
Industrial Economics & Technology Management	1	Industrial Economics, Computer & Terminal technology	1	Electrical Engineering	1
Materials Science & Engineering	1	Production Development & Innovation system	1	Enterprising & Business Development	1

Table 2. 18 of 19 respondents had academic education. This table shows the distribution of their educations.

Due to the number of respondents involved, we argue that the probability of that the answers accurately portrays the CIO profession is high. The combination of public sector, private sector, differing industries and the respondents varied experiences means that it is likely that recurring answers are representative of the profession, thus industry and organisation specific themes are excluded. This increases the studies reliability surrounding the phenomenon.

This study's validity is also high due to that the respondents have all been representative of the profession and therefore their view on the subject is valid. The possibility of remaining anonymous has further increased the validity, since this allows the respondents to speak freely. Because of the aforementioned reliability and validity, we argue that this study has a high degree of credibility and generalisability.

Respondents	Sector	Industry	Age	Years as CIO
Respondent 01	Public	State administrative authority	50-59	20 years
Respondent 02	Public	Healthcare	40-49	10 years
Respondent 03	Public	Education	50-59	15 years
Respondent 04	Public	Healthcare	50-59	6 years
Respondent 05	Public	Non-profit organisation	50-59	5 years
Respondent 06	Public	Education	60-69	10 years
Respondent 07	Public	State administrative authority	50-59	7 years
Respondent 08	Public	Education	60-69	10 years
Respondent 09	Private	Transport & Warehousing	60-69	25 years
Respondent 10	Private	Financial	40-49	4 years
Respondent 11	Private	Groceries	50-59	10 years
Respondent 12	Private	Transport	50-59	4 years
Respondent 13	Private	IT services	50-59	16 years
Respondent 14	Private	Automotive	40-49	4 years
Respondent 15	Private	Financial	30-39	2 years
Respondent 16	Private	Consumer goods	40-49	6 years
Respondent 17	Private	Insurance	40-49	6 years
Respondent 18	Private	Recycling	50-59	8 years
Respondent 19	Private	Event industry	40-49	2 years

Table 3. Demographic facts about all the respondents that participated in this study, including their respondent number, sector, industry, age span and total amount of years as CIO.

4.3 Method of analysis

All the gathered data is based in an organisational context. The literature describes how CIOs act within organisations whilst the interviews are with 19 respondents that is, or recently has been, a part of an organisation with a defined role. Because of that it would be extremely hard, or even unavoidable, to completely ignore organisational aspects as the results are presented. This means that when compared to other research, this study does not answer questions about how organisations could use the CIO in an optimal manner, nor how it should be adapted to fit in different organisations. This study rather focuses on the professions evolution, as a single entity outside organisational boundaries, and what the future may hold. This study analyses the data in such a way that challenges specific to organisations or industries are removed and only those that represent the professions are left, this is done using the framework created by Abbott (1988).

According to Abbott (1988), to understand a profession and its evolution, a researcher must look at professions as part of a larger interdependent system of professions that are connected and in constant battle over jurisdictional control. To understand the evolution of the CIO profession, four phases have been produced that represents different time intervals and that are both based in the previous research and from the interviews, as can be seen in Table 4. Column two and three are both based in the literature review and are separated based on if the articles are published before or after the millennial shift, this breakpoint was chosen due to that it was approximately in the middle of the CIO professions lifespan. Whilst column four and five are based on the interviews and represents either the current state of the profession, or a possible future state of the profession. To separate the CIO professions evolution into four different time intervals was done in order to gain an overview of its evolution, to be able to at a quick glance see in what direction it is moving. Each interval is analysed through the mechanisms presented in Abbotts (1988) framework. In Table 4, the first interval is 1980-1999 and should be considered the starting point. All the transcribed material was first separated into documents, so each interview had a separate document. All interviews were then collected in an Excel-document with the structure following the questionnaire. This was done in order to handle the large amount of data and so that all respondents' answers were collected in one place, allowing for the ability to more easily find patterns within each question. The literature was also structured in an Excel-document using three major themes: *The desired competences and characteristics, The different roles between organisations* and *Relationship with other profession*. These are also the headings in section 5.1 Literature review 1980-1999 (Past) and 5.2 Literature review 2000-2017 (Past).

Abbott (1988) Mechanisms	1980-2000, Past (Literature)	2000-2017, Past (Literature)	Present (Interviews)	Future (Interviews)
Connectivity				
Dominance				
Residuality				
Systemisation of professional knowledge				
Reduction				
Treatment				
Metaphor				
Positive formalism				
Lack of content				
Amalgamation				
Division				

Table 4. The method of analysis created using Abbotts (1988) framework from an evolutionary standpoint. This by analysing the past, the present and the future of the CIO profession using the eleven mechanisms.

4.4 Reflection of methodology

Even though there are upsides to the chosen methodology, there are risks as well. One such a risk is that a majority of the academic journals used as empirical data in this study are normative, meaning that they describe what the CIO should be and how they should behave, rather than what they were when the study was performed. This in contrast to the primary empirical data that is descriptive and describes how the respondents act and behave in their profession today, as well as their thoughts on the future of their profession. This risk has been dealt with by using the secondary sources in such a manner that one can see how the profession has changed over time, rather than finding what a CIO did at a given time. By taking this approach an understanding how the profession has changed was obtained. Yet another risk is that different journals and authors have different views upon the CIO profession, for example an informatics journal and an economics journal view the profession differently. Although this is beneficial

to the study since these differences are relevant when viewing a profession as part of a large system with other professions, it helps to create a better understanding of the CIO profession and its relation to other profession. Regarding the professions within the system, this study limits itself to other C-level executives. This limitation was done due to that the CIO is a C-level title, and thus we argued that most jurisdictional battles would occur at that level.

Given that this study uses interviews to gather the primary data, there is an inherent risk to this approach that the respondents gives an incorrect description of their profession due to their own subjective ideas. We argue that this is a risk that is impossible to get rid of completely, although it has been mitigated due to the number of respondents and their different backgrounds.

There are also external factors that could affect the respondents and their answers. An example of this would be the new law, GDPR (General Data Protection Regulation) (Datainspektionen, 2018), which was just about to be implemented when the interviews were performed. This could mean that this were brought up more, compared if the study was performed a year earlier or later. This is therefore important to consider when analysing the data, since it could affect the study's reliability.

There is a potential risk that the respondents' answers are primed since the questionnaire is inspired by previous research and Abbot's (1988) framework. However, we argue that this risk has not affected the study negatively, rather the opposite. The questionnaire could have excluded being inspired by Abbott (1988), but that would run the risk of having empirical data that would not have been possible to be analysed since it would not have been relevant to the framework. If the previous research had been excluded we argue that there would not have been enough data to see potential changes over time and find trends. We therefore found it important to include both aspects when creating the questionnaire, in order to increase the study's quality.

Other types of methodologies could have been applicable to the study as well, in order to obtain other types of data for the theoretical framework. Another qualitative method would have been observations. By observing CIOs and how they interact with other professions at an executive level, a different understanding would have been created from that of qualitative interviews. There are however several limitations to observations. First, we argue that it would be difficult to gain access to CIOs that would allow for observations during for example top management meetings. Second, given the study's time limit only a few CIOs would have been observed which would cause the data to be highly specific to the organisation they act within. A third limitation of observations would be that the CIOs would know that they were being observed, which could affect how they behaved. All of these factors would have lowered the studies reliability and validity. Therefore, a qualitative interview study was chosen in order to fulfil the purpose of this study.

One could also have used a quantitative method by surveying CIOs, although with such an approach the study would lack the depth that is required to answer its purpose. This because of the difficulty to formulate a survey that allows to the same depth as an interview, but also the limitation that it does not allow for follow-up questions. Therefore, quantitative approaches were dismissed.

Another approach to answer the study's purpose of understanding the CIO professions evolutionary process in a system of profession would be through qualitative interviews with other profession to gain their perspective. Although this was deemed outside the scope of this study and was instead considered as an avenue for future research.

5. Empirical findings

This chapter will be divided into four time phases. The first two represents literature that has been conducted about the CIO, where the first phase represents literature published between 1980-1999 and the second one 2000-2017. The other phases are based upon data collected during the interviews and will represent CIO's perspective of the present state and their thoughts about the future.

5.1 Literature review 1980–1999 (Past)

5.1.1 The desired competences and characteristics

A recurring theme was that the CIO should be a businessperson and see technological opportunities from a business perspective (Rockart et al, 1982; Gupta, 1991; Romanczuk & Pemberton, 1997). Unlike other professions, the CIO ignored traditional boundaries within an organisation (Gupta, 1991; Romanczuk & Pemberton, 1997). As a result of this the CIO was a controversial role (Romanczuk & Pemberton, 1997), with some stating that it was inflation of titles, and others that it was a sign that the MISs importance had increased (Gupta, 1991).

Rockart el at (1982, p.5-6) were one of the first of their kind to claim that the CIO belonged in the TMT and needed to have a holistic view, be a "*manager of managers*" and amongst others possess political and communication skills. Authors argued that the CIO was a technician, but they had to become something more, they had to become "*[...] businessmen first, managers second, and technologists third.*" (Synnott, 1987 p. 24, as read in Grover et al, 1993, p. 108). The importance of a holistic perspective was further supported by Romanczuk & Pemberton (1997). As previously mentioned the CIO should be a businessperson, whose main focus should be on long-term strategic planning (Highbarger, 1988; Gupta, 1991; Ross et all, 1996). In order to add value to the organisation and to increase their influence DeLisi et al. (1998) found six areas that CIOs should focus on; develop a big picture perspective, high interpersonal skills, raise awareness of what value IT can bring to the organisation, reporting their results, establish relationships with other executives, increase their visibility to others and to become a change agent.

According to Gupta (1991) the CEOs expectations on CIOs are often inaccurate and the CEO can at times feel manipulated by the CIO due to their lacking IT knowledge when the CIO increases their jurisdictional control. The author further argues that in order to mitigate the mismatching expectations and CEOs distrust towards the CIO should improve their communicative skills and develop IT strategies together with the CEO. CIOs also should have business knowledge and use technological opportunities to improve business. Although, he argues that the CIO cannot be the sole actor within IT, the CIO must utilise those beneath them to offload tasks. Another study that aimed to uncover what the purpose of a CIO is was performed by Grover et al. (1993) in which they found that a CIO is not all to dissimilar from that of financial executives since both tend to view themselves as supporting functions. They further argued that a CIO must be capable of leading others, they must be capable of befriending other executives, they must have a sense of awareness about how other organisations use IT, they should be the liaison between the organisation and the external market, they must also be entrepreneurs who can find business needs and solve them, a CIO must also be good at allocating resources.

Gottschalk (1999) described the CIO as a complex and strategic role that must focus on establishing and maintaining relationships with line managers. Apart from developing relationship skills, he further states that CIOs have more responsibilities than general managers, they are responsible for IT personnel and the training, recruitment, and retention of said personnel. CIOs further have several financial aspects such as budgeting, forecasting and authorisation.

5.1.2 The different roles between organisations

Several researchers studied the CIO role and what their purpose was, this since it was difficult to know what a CIO should do (Rockart et al, 1982). Both Rockart et al. (1982) and Benjamin et al. (1985) found that it was important for CIOs to become more business focused, which was later further supported by Gupta (1991). Duffy & Jeffery (1987) argue that for IT to be successful as a strategic resource it would require a strong figurehead, although the CIO was considered a controversial role (Romanczuk & Pemberton, 1997; Gupta, 1991).

This led Duffy & Jeffery (1987) to predict a possible evolution path for the CIO, which was summarised in four steps. The first stage would entail using IT as a tool to conceptualise competitive advantage through. The evolution would result in the fourth stage, in which the CIO leads a full team and together with the CEO creates an organisation which stimulates innovation and creativity where technology and business interact, with the purpose to proactive create strategic competitive advantages through IT.

Another study that focused on the CIO and their responsibilities was conducted by Highbarger (1988) who found three overarching responsibilities CIOs had, which are as follows; *Cost-effectiveness*, including investments, operations cost, maintenance costs of hardware and software. *Technological competitiveness*, internally in order to maximise profitability and externally in order to gather intelligence about competitors. *Organisation*, the importance of being surrounded by other managers that understand both the basics in business and IT-related operations. According to Gupta (1991) the CIO oversaw long-term strategy planning and should leave the more technical aspects such as keeping the systems running to more specialised roles beneath them. It was however still difficult to know what a CIO did and what value they added by the end of the 90's, as Gottschalk (1999, p.390) argues that "*the CIO role varies dramatically among firms in terms of background, roles, and specific IT strategies*".

5.1.3 Relationship with other professions

Information management and information activities were usually part of the CFO profession's jurisdictional control, but as this grew CFOs found themselves incapable of handling the information and thus the CIO was created as a profession to control it (Miller, 1983). Due to this the CIO was most often placed beneath the CFO (Benjamin et al, 1985; Romanczuk & Pemberton, 1997).

The CIO's influence was also affected by the CEO's perspective on IT, since some CEOs believed that there was no need for IT to be present on executive level, whilst others had surrealistic expectations that the CIO immediately would solve all crisis related to IT, due to their lacking IT knowledge (Gupta, 1991). Gupta (1991) further argue that the CIO-CEO partnership is important for an organisation success, something that is further supported by researchers who argue that a strong CIO-CEO relationship will help organisation obtain competitive advantage (Feeny, 1992; Li & Ye, 1999). But in order to do that, Grover et al. (1993) explain that the CIOs' organisational environment need to establish clear expectations.

Exley (1990) found that there is an increasing number of stakeholders within IT, since both the CIO, CFO and other senior executives require both information and computing power to help them manage an ever-changing environment. In order for CIOs to be viewed as successful by other executive members they must possess good communicative skills (Rockart et al, 1982; Gupta, 1991; Grover et al, 1993; Romanczuk & Pemberton, 1997) and have good business skills (Synnott, 1981, as read in Pemberton, 1992; Rockart et al, 1982; Gupta, 1991; Romanczuk & Pemberton, 1997).

Some authors in the late 90's explained that it was not clear whether or not the CIO would stick around though. This since the role's ambiguity and its apparent inefficiency in combination with a generally increasing IT knowledge was mentioned as reason as to why the CIO role might disappear (Palmlund, 1997; Romanczuk & Pemberton, 1997), or that other professions such as the Chief Knowledge Officer should develop the business through IT (Romanczuk & Pemberton, 1997). Others had the opposite argument, as Li (1999, p.35) proclaimed that "*the true role of CIOs is just about to be born*".

5.2 Literature review 2000–2017 (Past)

5.2.1 The desired competences and characteristics

When entering the new millennia, the importance of CIOs with high communicative skills was further echoed by Potter (2003). He found that it is of uttermost importance that the CEO trust their CIO, this because of that trust is a key component for a good communication line between the two, which in turn affects the CEOs expectations of the CIO. Another aspect that was found to be important for CIOs were their ability to influence their peers (Enns et al, 2003:2). Enns et al. (2003:1) found that the CIOs ability to influence was not affected by their background, may it be technical or business, due to that a person who is promoted to CIO is required to be capable of exerting influence.

Krotov (2015) argues that as IT becomes more important for organisations the CIOs importance is also increased, although TMT and CEOs do not fully trust their CIOs. This distrust for CIOs can be based on previous IT investments turning out poorly, TMTs lack IT knowledge, different views upon IT and that CIOs failed to establish good relationships with other executives. To mend the CIOs relationship with other executives, Krotov (2015) further argues that both the CIO and other executives need to work on improving their communication with each other, increase their knowledge sharing with each other about their respective fields and to develop a shared vision about what IT should do for their organisation. He further states that the CIO should also focus on what IT can deliver in terms of business value and improve their political and leadership skills in order to be accepted by the rest of the TMT.

5.2.2 The different roles between organisations

As time went on more and more were expected to be performed by the CIO. As can be seen through Kwaks (2001, p. 16) findings, since a CIO must be capable of many things, not only must they handle technology, have good interpersonal skills, they must also be "[...] *a marketer, a strategist, a technologist, a leader, an organizational behaviorist — all these things".* This sentiment that a CIO should be capable of dealing with a large number of tasks is further echoed by Ball (2002, p.11) when he states: "*The very first thing that the CIO must do is to create a 30-hour day! ".*

Researchers have tried to find a solution to the ambiguity of the CIO-profession, as they have developed several roles depending on the shape of organisation (Leider & Mackay, 2007; Chun & Mooney, 2009; Peppard, Edwards & Lambert, 2011; Gerth & Peppard, 2016). Chun & Mooney (2009) even state that there are two distinct roles within the CIO. One that is a C-level executive whose primary objective is to work with other executives and change strategies and processes, the "Chief Innovations Officer", this role is similar to what the early predictions of CIOs were, a business person. The other part of the CIO role is similar to the "Chief Technology Officer", whose primary objective is to manage organisations' IT. They further found that two factors influence CIOs ability to change, how standardised and integrated an organisations infrastructure is and what degree of importance IT has for the organisations core business.

Reoccurring in the literature is the critical need of having a CIO in a strategic role within the firm and to be a part of shaping and implementing the organisations strategies (Polonsky et al, 2004; Glaser, 2005; Preston et al., 2008:2; King, 2008; Yayla & Hu, 2014). Also, that CIO's with a decision-making authority in organisation have a higher performing IT (Preston et al., 2008:2; Sobol & Klein, 2009). Hennessy (2008) found that CIOs are crucial for an organisation's success, and together with the CTO they can transform an organisations IT and then extend that into their products.

After the terror events on 11th of September 2001, a shed of light was brought on the increasing need of IT security in organisations, which was expected to be delivered by the CIO (Hinde, 2001; Ball, 2002). An increased business need of IT security and cybersecurity can also be traced in newer research (Khallaf & Majdalawieh, 2012; Manworren, Letwat & Daily, 2016). It has been questioned whether the jurisdictional control of IT security should be a part of the CIO professions responsibilities, or if a new profession should handle such questions, the CISO (Klimosi, 2016). However, the performance of IT

security has been positively associated with CIOs skillset and their reporting structure (Khallaf & Majdalawieh, 2012). Iwasaki (2007) found that CIOs regards IT security as an important aspect of their work.

5.2.3 Relationship with other professions

Studies in the 2000's and further on show that CIOs most often find themselves reporting to the CFO, CEO, COO or the TMT and depending on to whom the CIO reports, the organisational impact differs (Moriarty, 2001; Glaser, 2005; Banker et al. 2011; Khallaf & Majdalawieh, 2012). It is also shown that reporting to the CEO has a positive impact on the strategic use of IT and increases the CEOs knowledge within the IT discipline (Chun & Mooney, 2009; Reinhard, 2012; Krotov, 2015). Banker et al. (2011) underline that cost leaders have a tendency of letting the CIO report to the CFO, while differentiators tend to have another reporting structure to the CEO.

Like before the millennium shift, the conflict of interests between the CIO and the CFO continues (Zorko, 2001; Palmer, 2003; O'Donell et al, 2004). CFOs require CIOs to teach them about how IT affects their jurisdictions and to transfer their knowledge within the IT discipline (Stewart, 2000; Van Decker & Sinnet, 2013) and to get fast access to data as basis for decisions (Coté, 2002; Palmer, 2003). The importance of a good collaboration between the CFO and CIO to utilise IT in an optimal manner has been pointed out by Peppard (2010), he further mentions that other professions' IT-savviness as one major challenge for CIO's. The following quote is regarding a CIOs perspective on other executive's knowledge within IT:

> *"The majority of executives have lamentable IT fluency—and don't seem particularly troubled by the fact. Yet they would never be so blasé about, say, a lack of understanding of finance or marketing—because they know they would be vilified by peers. Yet somehow, being ignorant about IT is not seen as a major problem for business people. Except of course it is."* – Peppard (2010, p. 81)

The importance of a good collaboration between the CFO and CIO to utilise IT in an optimal manner has been pointed out by several researchers as well (Marshall, 2004; de Mesa Graziano, 2004; Murray, 2006; Healthcare Financial Management, 2006; Kirkley, 2007; Glaser & Kirby, 2009; Nussbaum, 2009; Clayton, 2013; Schobel & Denford, 2013; Van Decker & Sinnett, 2013; Naukam, 2014). Also, that the complexity of IT investments often requires both the CIO and CFO to work together to maximise the possible return on investment (de Mesa Graziano, 2004; Murray, 2006; Kirkley, 2007). Gerth & Peppard (2016) found that CIOs are still the ones to be blamed for failed IT investments, the role had even suffered enough criticism so that some suggests that it should be replaced with the CDO.

The importance of having the CIO equal to other executive roles within strategic decision making to fully utilise technology and information has been confirmed in previous research (Polansky et al, 2004; Glaser, 2005; Lawler & Finegold, 2006; King, 2008; Preston & Karahanna, 2009; Reinhard, 2012). A good relationship between the CIO and TMT, the organisations culture and view on IT influences the CIOs strategic decision-making authority directly, which in turn directly influences ITs contribution to the organisation (Preston et al., 2008:1).

5.3 Interview study (Present)

5.3.1 The desired competences and characteristics

A common trait shared by all respondents is that they oversee aligning strategic goals between the business and IT. All respondents have, in one way or another, stated that it is important to work closely with the business in order to understand their needs. A recurring theme was that the CIOs considered themselves to be generalists and summarised their responsibilities as being "*the head of IT*". A reason for why it has become a generalist role is due to that ITs effect on business and its processes has increased, which requires the CIO profession to have a holistic perspective to understand the business needs.

The most common jurisdictions the CIOs controlled were: technology driven business development, IT-strategy, operations and information flows, outsourcing, IT governance, IT maintenance, support, IT security, information security, projects, data communication, change management, systems integrations, business intelligence (BI), monitor markets, handling master data, system development, infrastructure, legacy systems and architecture. Other jurisdictions that were less common and only a few respondents were in control of were human resources of IT personnel, work environment, establishing culture and risk management. In organisations whose primary business models were digital, alternatively that their services involved a lot of IT, the CIOs often had an internal and external responsibility. In these types of organisations jurisdictions such customer experience and customer satisfaction were recurring.

When asked about how they deal with the large number of jurisdictions, the respondents highlighted the importance of delegating work to others. R17 exemplifies this delegation in which the CTO handles the infrastructure and IT-support, whilst application and cloud-based services are handles by Head of Applications and a Head of BI who is also responsible for the organisations data warehouse and self-service BI.

" I do not even possess 10% of their expertise within their areas, I can show the way and say 'this is what we have to do'"– Respondent 17

This holistic view is used in order to understand the organisation as a whole, which the respondents considers critical if they are to act strategically.

When asked who defined the position of CIO in their organisation, five stated that it was the CEO or TMT, three that it was the CIO in combination with the CEO and eleven answered that it was the CIO itself. A vast majority states that there are two different types of CIOs, one that is more technology focused which has a good understanding about technology choices and acts out of a cost savings perspective. The other type of CIO is business centred and works with business development and how business needs can be satisfied using IT. The vast majority also states that the first description does not accurately represent CIOs, rather an IT director. This in contrast to the latter description, which the respondents stated represents CIOs and what value they add to organisations. R11 even stated that those who are CIOs with a technology focus reporting to the CFO are "*fake CIOs*" and that it is a "*dying breed*".

5.3.2 Relationship with other professions

That fact that the CIOs reporting structure affects the organisations view on IT and the CIOs work is another recurring theme found within the empirical data. A vast majority mentioned that reporting to the CFO negatively impacts the CIO, due to that IT is then considered a cost and not an enabler. Therefore, a vast majority of the respondents believed that CIOs should report to the CEO and be granted a spot in the top management team (TMT).

" In organisations that view IT as a cost, IT is either a subordinate to the CFO and IT is considered a cost or an administrative function. Whilst CIOs that actually contributes are part of the top management team."– Respondent 05

When questioned about being a part of the TMT, 17 out of 19 respondents stated that is was a "*requirement*", due to that it was "*fundamental*" or "*very important*" in order for them to perform their work. The other two respondents stated that it was not required due to their situation and the purpose of the CIO within their organisation.

Fourteen of the respondents were part of their organisations' TMT, five were not. Out of the five who were not, two respondents had been part of the TMT but not in recent years. Out of these five CIOs four stated that not being part of the TMT negatively affected the CIO. Words such as "*devastating*" and arguments such as "*IT is deprioritised*" were used. The fifth person did not believe that it was of great importance, since the communication paths to the TMT were still clear.

The respondents claim that IT solutions permeates organisations to a larger degree, which in turn leads to more stakeholders within IT. Due to this some jurisdictions within the CIOs' control are more threatened than others. R16 exemplified this using a picture in which IT is depicted as three parts, in which IoT (Internet of Things) represents 10% of total IT costs, maintaining legacy systems 25% and operations and maintenance 65%. The respondent says that the first section and those 10% are the most attractive to other professions, in this section conflicts can arise. The other 90% are not only not of interest, other professions do not even want to touch it with a ten-foot pole. R16 argued that by presenting all of the above-mentioned parts of IT as an integrated whole, in which you either take it all or nothing, the respondent managed to steer other professions away from the sought after 10%.

The gathered data shows that IT-related decision are taken without the CIOs knowledge, and it is a problem. Seven respondents have mentioned issues regarding Shadow-IT (IT-related decisions taken without the CIOs knowledge). The respondents state that this affects their ability to perform their duties, which creates consequences for both the organisation, but also for the CIO profession. In order to mitigate these types of decisions, R04 presents past projects that failed due to that the CIO was not involved in the process. By doing this R04 underlined that "*these are the types of consequences that occur if we are not included earlier*". A few respondents state that Shadow-IT is one of the biggest challenges they face. On the other hand, a majority states that whilst it is still a challenge, it used to be a greater challenge in the past. To deal with legacy systems that are not in use anymore was another challenge mentioned by several respondents. This was highlighted by R13, with 16 years of experience as a CIO, who stated that this is a problem that "*more or less every CIO in Sweden has to deal with*".

Six out of the 19 CIOs have explicitly described the role as "*political*" in relation to other executives and TMT. The politic aspects of the profession have been described as such that most decisions taken within TMT is already decided before the meeting, with the meeting being merely a formal act. The political landscape in organisation can hinder developments and the pace of change, which requires the CIO to be capable of adapting and acting politically.

> *"I do not work with IT. I work with humans, power plays, structures and politics."*
> – Respondent 18

5.3.3 IT comprehension is higher than ever – but still too low

When asked about if IT comprehension in the organisation affects IT decisions, 17 out of the 19 answered "*yes*", nine of those 17 used words such as "*absolutely*", "*definitively*" and "*entirely*". The other two respondents answered "*both yes and no*", in which one respondent highlighted the changed perspective the organisation had, moving from viewing IT and business as two separate entities to one better aligned. The other respondent instead highlighted that the person within TMT representing IT has been a "*technician*" rather than a businessperson. This created a situation in which there was a mismatch of interest within the TMT, as the technician described technical solutions, whilst the rest of the TMTs interest was the business value.

R08 exemplifies other professions' lack of IT knowledge through describing a project in which the organisation was to build a visitor's location close to their office. A project member, who was part of the TMT, stated that the CIO was not necessary for the project since there were no IT-related decisions. The location was only supposed to have WiFi and that is something that "*the users runs themselves*". R08 then explained to the colleague that this type of service requires a special type of equipment that does not just magically appear, to which the project group answered that they had planned to dig out a path to a house nearby and access the fibre connection. Although, the house planned as a connection point was in the completely wrong direction of the actual fibre connections, according to the respondent. The respondent states that if you cannot pinpoint the consequences of others lacking IT comprehension, the CIO will be blamed once it does not work This "*misplaced blame*" was a recurring theme in the interviews. R08 exemplifies three types of people and their perspective on IT:

"There is no doubt about that others IT knowledge affects decisions. You have those who reason as if IT did not exist, then it is not even part of their decision-making considerations. Then you have those who understand that IT exists, and that they do not understand it and ask for assistance. […] Then you have those who believe that they understand IT, but they do not, and do not ask for assistance, which then results in failure."
– Respondent 08

The importance of excellent communicative capabilities in order to gain a greater degree of influence were highlighted by the respondents. All respondents stated that it is vital that the TMT understands IT and views it as an enabler. According to the respondents this is due to the hierarchical structure, traditional perspective on IT as a support function and mismatched expectations. R06 describes the lack of IT comprehension at an executive level in the following quote:

"There are few top management members in Sweden who can say that they have satisfying IT knowledge. A scarcity indeed when each member of the top management team should at least have enough IT understanding that they should know to ask someone with more competence than themselves for help. Today a lot of people do not even know that they should ask someone else, or they decide to do it themselves." – Respondent 06

To increase the IT comprehension in the TMT the CIOs describe that they often "*translate*" technical opportunities to a language and terminology that that is better suited to other executives, this so that they can achieve more influence and trust. A clear majority express that it is "*vital*" that one does not talk technology with other members of the TMT, one should rather use words such as "*business benefits*", "*business value*", "*user experience*" and, "*customer satisfaction*" and business terms such as "*profitability*" and "*revenues*" depending on whom the information is meant for. R11 exemplifies the importance of knowing your receiver in the following way:

"If I enter a meeting and say 'I have an idea about a project that will save us five million over the course of two years'; then I have the CEOs attention. 'And it will look like this'; then I have the CFOs attention. You need to find what the respondent is interested in. […] Once you have found it, that is when you can succeed." – Respondent 11

Other methods used by the respondents to increase other professions IT comprehensions is the usage of pictures, videos, and metaphors. R19 exemplifies the usage of pedagogical pictures, by depicting IT as an orchestra in which the conductor represents the supplier whilst clarinets and trumpets are the supplier's different services. By doing this it is easier for the receiver to understand. The usage of similes were commonly used by the respondents. R13 exemplified information security as that of a common lock for one's house, in case the wrong person has access to the key they can enter the house and take whatever they want. R13 describes that it is not an IT related question, but others in the organisation have made it out to be one. R01 describes the transition from analogue to digital and the value of digitalisation to colleagues the following way:

"It is like when we took the LP record and made a CD of it. The same content but digitalised, equally bound to its format. What we need to do is to go from the CD to Spotify where we stream music, where we can use the information to create new services." – Respondent 01

Five respondents highlighted the importance of inspiring their colleagues in the TMT in order to change their perception of IT. This can be done by retelling success stories from other organisation and how it has created competitive advantages. Although most respondents have described other professions lack of IT knowledge as something that affects them negatively, there exists another aspect of it.

Some CIOs describe how they have used other professions lack of IT knowledge to their advantage. R14 states that there are advantages to not always spill the beans, as can be seen through the following quote:

”You can be ’smart’ in these types of situations. Even if the task is simple you do not need to say so, you can withhold that information and say ‘I will see what we can do’ and a few weeks later say ‘I have found a solution for your problem’. This grants you an entirely different sense of respect. If you just say ‘Yes sure, here you have it’ you receive no respect or appreciation for it. There is a bit of politics involved.”– Respondent 14

As previously mentioned several CIOs have argued that a higher IT comprehension in their organisation would have favoured their daily work. R13 however, who previously worked in the manufacturing industry and now in an organisation whose products are digital services, states that an increased IT comprehension in an organisation can make a CIOs life more difficult. The respondent exemplifies by saying that the other organisation did not question decision as often as the organisation with higher IT comprehension.

”It was almost easier to convince others when no one understood, because they had confidence in me then and I could say ‘This is how it must be’ and they bought it. Now when I am at an IT organisation where we have some of the best people in their field in Sweden it can be more difficult to convince others. This was not something I had considered before.”– Respondent 13

5.3.4 Networking shapes the profession

Three types of networks can be found throughout the empirical data. These three types will be introduced, then the respondents’ reasons for partaking in them will be presented in the following paragraphs.

Industry specific networks. The positive aspects of this type of networks is that the majority of participants found themselves in similar situations, which made for better discussions. The respondents found these types of networks good due to that those who participate face similar challenges as themselves.

Non-industry specific networks. In these types of networks not all participants find themselves in similar situations, which made it so that these networks had wider perspectives and the respondents found it easier to interact with others, knowing they are not direct competitors.

Public sector networks. These networks are aimed towards governmental institutions, which created a large degree of transparency in which the participants can freely share information and interact with each other.

When asked if they participated in any unofficial or official networks for CIOs, 16 answered that they participate in at least one whilst three said they did not participate in any. The three who did not partake in networks had been active in networks but had left them. One stated that the reason for leaving the networks was the time commitment, there was no time for networks. The other two stated that the networks were good in the beginning, but as time passed the networks became repetitive and it could at times become too “*whiny*”. All three however state that there are benefits with the networks, such as listening to others when they describe their situation and their challenges.

Independent of the network all 16 of the respondents who were part of networks had different reasons as to why they partake. Although a recurring reason for participation have been that the networks were considered “*experience enriching*” since they get tips and through from other professionals. R05 expressed that “*I do not believe one should reinvent the wheel*” and highlighted the importance of listening to others and learning from their experiences.

Some respondents participate in networks to gain “*feedback*” that they do not get in their organisations. Several respondents state that they feel misunderstood in their organisation and that they lack colleagues to discuss certain questions or ideas with, therefore they partake in networks where they can discuss with other professionals from their profession.

”As a CIO you constantly hear ’that did not succeed, I did not receive that, that does not work’. Then it is very nice to get to talk to each other. Of course you also learn of each other and get inspiration and ideas about what you can do. ” – Respondent 06

The respondents therefore find the networks supportive and find comfort in participating in them, due to hearing that other professionals in the profession face the same challenges and problems as them.

”I believe they (the networks) are important, since it is a relatively new role (the CIO). I think if you ask 100 people what a CIO does, you will get about 100 different answers. I believe that through these networks you can build some form of an industry praxis, together this CIO-collective can build some form of common expectations template about what it is one should actually do, what is the core business for a CIO. This is important.” – Respondent 15

Topics such as IT strategy, sourcing strategies, legal compliance (e.g. GDPR) and the usage of technology (e.g. blockchain, artificial intelligence) have been discussed when the networks have had meetups. The profession and its relation to other professions have also been a topic of discussion. The following quote by R14 exemplifies a perspective on why to participate in networks:

”Especially to exchange ideas with other people who do not know the members of my organisations top management team. You can speak freely and say ‘I have a problem with the CMO and cannot convince them about this. How do you do it?’” – Respondent 14

Other respondents expressed that it can be pleasing to participate in networks in order to confirm that you are not alone with your challenges.

Independent of network 11 out of the 16 networking CIOs stated that these networks are important for the professions. The other five described it as “*fundamental*” or “*of great importance*” for them in their work, but also for the profession as a whole.

5.4 Interview study (Future)

A clear majority of the respondents agrees upon that there will be an increased need of executives with an IT perspective on business development in the TMT. This is exemplified by R05 and R07 who both believe that IT will be further commoditised in the future, and that technology will be interchangeable. The respondents see the need of a profession that is more of a change agent and digitalisation leader than an IT director. Few respondents argued that information security should not be part of the CIOs jurisdictional control. The name of this profession is not clear though, the respondents keeps mentioning the CDO in relation to the CIO, though with different perspectives.

R09 is one of several who does not believe that the CDO will gain momentum, that it is merely a trending profession that will disappear. Others state that the CIO professions’ past and its coupling with technology will affect the profession and that a new title in the shape of CDO could be seen as a “*revitaliser*” in order to be even closer to the business. R14 has a similar perspective and references the ABD chief that existed 20 years ago, that was later turned in to the IT director which is now often called the CIO. These steps were all made in order to get closer to the business, the next step in this chain of events could be the CDO title. R06 states that the CDO could be a step closer to the business, whilst the CIO regresses back to an IT director.

A third perspective is that the CDO will be placed beneath the CIO and work with more business-related questions, which would still leave the CIO as the head of IT and its relationship with business. Although several respondents state that the titles name does not matter, they summarise the CIO and CDO as “*same same but different*”.

"*By removing the infrastructure and technology from the CIO, you create the CDO, which is closer to the business. But in the near future the technical IT is something you must still deal with." –* Respondent 03

An argument that both R07 and R14 argue for is that the CIOs days could be numbered soon. This is based in that the need of IT knowledge and an understanding of IT by other executives is critical, to such an extent that other professions will learn it, it will become a hygiene factor. This means that the CIOs current jurisdictions are taken from it and that business development through IT will become an organisational question which is spearheaded by other professions.

"The CIO role has existed for a while now and I believe the CDO role will disappear quicker than the CIO role, but I also believe the CIO role will disappear."– Respondent 07

In contrast to this R02 believes that the CIO will become even more of a generalist and act as a '*spider in the web*' function. With an increased IT comprehension, the CIO/CDOs influence could be increase. This because other profession in the TMT are more interested in the opportunities that IT creates.

R11 argues that there is an inflation in titles, and therefore the CDO could become the new CIO. The following quote illustrates this thought about business focused CIOs today and tomorrow through a metaphor about the Formula One driver Michal Schumacher and an organisations CEO.

"Schumacher gets first place in F1 but has not screwed a single screw to the car. We need both. We need the IT people who knows the bolts and nuts, we also need the CIO who can tell the drive how they can improve and how then can utilise the tools better. Furthermore, more tools that the driver had never thought of will be created that improves him further. We need it today, we needed it yesterday, and we will need it tomorrow."– Respondent 11

6. Discussion

In this chapter the collected data will be analysed through Abbotts (1988) framework regarding the CIO professions past, present and future state. After the categories and all mechanisms has been analysed, the future path of the CIO is presented as well as implications for practice and research together with limitations and future research.

6.1 The CIO's system of profession

The profession has gone through several changes since it was introduced in the 80's. In table 5 each mechanism and how it has been affected and changed over time is presented. In the follow sections each category and its mechanisms will be analysed. Everything in the table is described in the sections beneath this paragraph. Table 5 should be read from left to right for each mechanism.

6.1.1 System Properties

The CIO professions systems connectivity has always been high, and still is, although it has decreased over time. When the CIO profession emerged, it was difficult to pinpoint their jurisdictions. It is to this day still difficult to find where the CIO professions jurisdictions begin and where they end. But today other professions are becoming increasingly interested in jurisdictions and tasks that the CIO professions currently controls. These jurisdictions used to be viewed as a complex collection of IT entities that other professions had no interest in, or something they did not know how to deal with. However, the empirical data shows that other professions are starting to show interest in some of the CIOs jurisdictions, as R16 exemplified through IoT.

The decreased level of connectivity was exemplified by the respondents when they proclaimed that it is very difficult to separate and tell who is in charge of what in jurisdictions that affects IT and business, since several of their decisions are made in collaboration with other executives, through compromises and political games. Difficulties regarding jurisdictional control can also be found throughout the literature, as there have been several attempts to study what a CIO does (Rockart et al, 1982; Benjamin et al, 1985; Grover et al, 1993; Romanczuk & Pemberton, 1997; Polansky et al, 2004; Preston et al, 2008; Peppard, 2010; Krotov, 2015). The need to be politically adept has also been studied (Rockert et al, 1982; Preston, 2008:1; Krotov, 2015). There are even cases where decisions are taken that directly affect the CIOs jurisdictions within their knowledge. Several respondents mentioned that shadow IT (the usage or investment in IT that the organisation has not approved of or knows about (Haag & Eckhardt, 2017)) is still being utilised, although to a far lesser extent than in the past.

The changing perspective of IT and that other professions professionals tend to use IT in their daily lives more, has caused the CIO professions connectivity to be lowered. It should however be highlighted that it is still considered high, just to a lesser degree than previously due to that other profession have started to show interest in some of the CIO professions jurisdictions. Something that is likely to continue in the future as more decisions will be taken that belongs to the CIOs jurisdictions.

As the perception of IT has changed from being primarily seen as a cost reducing function to that of a strategic resource (Gupta, 1991; Exlay, 1990; Ross et al, 1996; Peppard, et al, 2011), other professions are more likely to want to utilise it. The increased number of organisational demand for IT (Reinhard, 2012) and an increased number of stakeholders, as a result of the changing perception, will increase the complexity and connectivity of IT. This is due to that as IT becomes a more important aspect of how organisations do business, more professions will be affected by it and will seek to expand their jurisdictional control to incorporate more IT. One can therefore argue that the CIO professions system will continue to have a high degree of connectivity, although less so than before.

	Past (1980-1999)	Past (2000-2017)	Present	Future
Connectivity	The connectivity of the system is high, other professions show little to no interest in contesting the CIO's jurisdictions.	The connectivity of the system is still high, but decreased since other professions start to show interest in the CIO's jurisdictions.	Decreasing level of connectivity due to increased involvement from other professions and that decisions are taken outside of the CIO's jurisdictional boundaries.	Further decreased level of connectivity due to increased involvement from other professions and that decisions are taken outside of the CIO's jurisdictional boundaries.
Dominance	Structural dominance (CFO, CEO)	Structural dominance (CEO, TMT, CIOs influence is increased)	Cultural dominance with the CIO being in possession of the dominant ideas, a lesser degree of structural dominance (CEO, TMT, CIO)	Further increased cultural dominance.
Residuality	High level of resudiality, due to being ambiguous.	Continued high level of resudiality, although with an increasing knowledge about the CIO's jurisdictions.	Decreased level of residuality although still high within jurisdictions suchs as business development through IT.	Continued decrease level of residuality, due to the profession regressing.
Systemisation of professional knowledge	The system is currently in a low degree of systematisation of professional knowledge.	The system is currently in a low degree of systematisation of professional knowledge.	The system is currently in a low degree of systematisation of professional knowledge.	As more professions enter the system and performs reduction and treatment attacks, the systemisation of professional knowledge will increase.
Reduction	The lack of business knowledge and the lacking communicative skills by CIO's together with the systems perception on IT hindered the reduction attempts made by CIO.	The business knowledge and the communicative skills by the CIO increases but are still low. The perception on IT started to change, but the IT knowledge by other professions stayed low as well.	The CIO's business knowledge is higher than before, as they actively work to increase their communicative skills. Even though the IT knowledge has increased, reduction is still commonly used.	Due to other professions increased IT knowledge the CIOs ability to perform reduction will be reduced.
Treatment	Other professions lack of IT knowledge and the systems perception of IT affects CIOs ability to use treatment.	Other professions increased, but still lacking, IT knowledge and their changed perception of IT affects CIOs ability to use treatment.	As other professions IT knowledge has increased, treatment has been more applicable.	Due to other professions increased IT knowledge the CIOs ability to perform treatment will be increased.
Metaphor	The lack of business knowledge and the lacking communicative skills by CIOs together with other professions IT knowledge affects how metaphors are done.	The business knowledge and the communicative skills by the CIO has increased but are still low. Other professions IT knowledge remain low.	The business knowledge and communicative skills of CIOs in combination with other professions IT knowledge affects the way CIOs metaphors. Commonly used mechanism.	The business knowledge and communicative skills of CIOs in combination with other professions IT knowledge will continue to affect the way CIOs use metaphors.
Positive Formalism	The CIO profession is a generalist, but with a main focus within the IT discipline. Low level of positive formalism.	The CIO profession is becoming more business focused and more of a generalist. Reduced positive formalism in comparison to 1980-1999.	The CIO gains more jurisdictions, and can be considered even more of a generalist. Reduced positive formalism in comparison to 2000-2017.	Due to the increased systemisation of professional knowledge, the CIO profession is expected to return to be less of generalist. Increased level of positive formalism.
Lack of Content	Due to being a generalist, but with a main focus within the IT discipline, the CIO profession had a high level of lack of content.	With the increasing amount of jurisdictions the CIO profession became more of a generalist. The level of lack of content was increased, compared to 1980-1999.	With the increasing amount of jurisdictions the CIO profession became more of a generalist. The level of lack of content was increased, compared to 2000-2017.	Due to the increased systemisation of professional knowledge, the CIO profession is expected to return to be less of generalist. Decreased level of lack of content.
Amalgamation	Uncommonly used tactic.	Uncommonly used tactic.	Used as a tactic to defend vulnerable jurisdictions from other professions.	Decreased use of amalgamation due to the higher degree of systematisation.
Division	Commonly used tactic by CIOs in order to maintain either formal or advisory jurisdictional control.	Commonly used tactic by CIOs in order to maintain either formal or advisory jurisdictional control.	Commonly used tactic by CIOs to maintain either formal or advisory jurisdictional control, to keep IT business related jurisdiction for themselves	Although the CIO will have less jurisdictions, the profession will still utilise a division strategy.

Table 5. How Abbotts (1988) mechanisms have developed over time for the Chief Information Officer profession, read from left to right. The dark-grey boxes represent a major shift in the mechanic between two time periods.

At its creation the CIO profession was placed beneath the CFO and reported to them, thus due to that IT was generally considered a cost (Miller, 1983; Gottschalk, 1999; Banker et al, 2011). This gave the CIO very little influence and its professions system had a structural dominance, in which the CFO dictated what the CIO could and could not do. Although the CFO was not the sole dominant profession, the CEO could also be considered a dominant profession as it is the profession in control of organisations. As the perception of IT changed and the need for IT was increased, the CIO profession was given a spot within the TMT according to the respondents, something that researches have advocated for a long time (Rockart et al. 1982; Polansky et al, 2004; Glaser, 2005; Lawler & Finegold, 2006; Preston & Karahanna, 2009; Reinhard, 2012). This meant that the CIO was shaped by the TMT rather than the CFO, meaning that the structural dominance moved away from the CFO to the TMT. Although, moving to the TMT in combination with the changing perception of IT changed the dominance within the CIOs system of professions, from a structural dominance towards a cultural dominance. Being in charge of the dominant ideas within IT, the CIO profession was given more influence and more dominance. This was pointed out by the respondents as well, who said that it was either they, or a combination of them and the CEO, who decided what the CIO should do at their organisation. This leads us to believe that society and its demand for better IT solutions from organisations have increased the cultural dominance within the CIOs system. With CIOs being the profession in control of the dominant ideas of the system (being the profession with the highest IT comprehension), their influence has increased as the cultural dominance have overtaken the structural dominance within their system. This increased cultural dominance seems to be the most likely future outcome, since the perception of IT as a tool for competitive advantage has increased (Li & Tan, 2013) and nothing really indicates that it will slow down.

At the early stage of its evolution, the CIO profession suffered from a high degree of residuality. As can be seen from the ambiguity surrounding the profession and that it was unclear what jurisdictions and tasks the profession was expected to perform (Rockart et al, 1982), partially due to its responsibilities varying from organisation to organisation (Gottschalk, 1999). The ambiguity surrounding the profession continued after the millennial shift, as can be seen by their shared jurisdictional control over IT investments (de Mesa Graziano, 2004; Murray, 2006; Kirkley, 2007). When looking at the professions current state, one can see that it still suffers from a high degree of residuality, although lower from before. As it was made clear from the interviews that the profession is in charge of the traditional IT and that other professions did not try and intervene in those tasks. However, the profession still suffers from a high degree of residuality within business development through IT, it is unclear what the CIO profession should oversee when it comes to that jurisdiction. This is also a jurisdiction that has been attacked by others, one such example is the CDO (Gerth & Peppard, 2016; Horlacher & Hess, 2016, Tumas, Berente & Brocke 2017). If the CDO do succeed in establishing themselves as the profession who performs business development through IT, the CIO professions residuality will be decreased, as they will fall back to traditional IT.

Due to existing in a system with a lessened degree of connectivity and having their dominance increased, the CIO profession still suffers from a high degree of residuality. With IT being an attractive discipline for professions to want to control, as seen by the respondents who claimed that it was not uncommon for others to want control of the '*fun*' jurisdictions of IT, the competition within the IT discipline has increased. More specialised professions such as the CISO, CTO and the CDO have entered the arena all with different jurisdictions in mind. The CISO is attempting to take information security away from CIOs (Klimosi, 2016), the CTO aims to control the traditional IT (Horlacher & Hess, 2016) whilst the CDO is looking towards the business aspects of it (Gerth & Peppard, 2016; Sing & Hess, 2017; Tumas, Berente & Brocke, 2017).

The profession has been threatened in the past, at its earlier stages they fought with the CFO for jurisdictions (Miller, 1983; Zorko, 2001; Palmer, 2003; O'Donell et al, 2004) and whether or not they should report to the CEO or the CFO (Moriarty, 2001; Glaser, 2005; Banker et al. 2011; Khallaf & Majdalawieh, 2012). There was also a time when it was questioned if business development through IT

should be controlled by the CIO, or e.g. the CKO (Romanczuk & Pemberton, 1997). It can be argued that it is different this time, due to the professions increased dominance compared to then, and due to that the profession has an even higher level of abstract knowledge today, and that the attackers today are different specialist professions, not another already established C-level profession.

As a result of all the previously mentioned mechanisms (connectivity, dominance and residuality), one can argue that the professional knowledge is about to become systemised. By going from the previously low level of abstract knowledge with ambiguous borders between jurisdictions and profession, to a much less ambiguous system, where it is easier to tell which jurisdictions belong to whom, and where to draw the lines. In such a system, professions might struggle with complex tasks, as Abbott (1988) states that when there is a high degree of systematisation of professional knowledge, complex problems tend to be ignored. The implication for a system surrounding IT professions might become even more prone to ignoring complex problems, since IT itself has been a reoccurring reason for complex challenges.

6.1.2 Cognitive strategies

This study presents four perspectives on how the CIO professions cognitive strategies have been shaped. These four are; *the CIO professions business knowledge*, *the CIO systems perception of IT*, *other professions IT knowledge* and *the CIO professions communication skills* (Figure. 4).

The first perspective is the CIO professions business knowledge, which relates to how the profession interpret problems based upon their professional knowledge. Academia states that the CIO profession must become a businessperson and a manager with an understanding of technology, rather than being a technician (Rockart et al, 1982; Kwak, 2001; Krotov, 2015; Gerth & Peppard, 2016). This has meant that the CIO profession have been forced to incorporate an increased amount of business knowledge and understanding in their professional knowledge to make other executives listen to them. All of the respondents pointed out the importance of business knowledge for achieving success as a CIO.

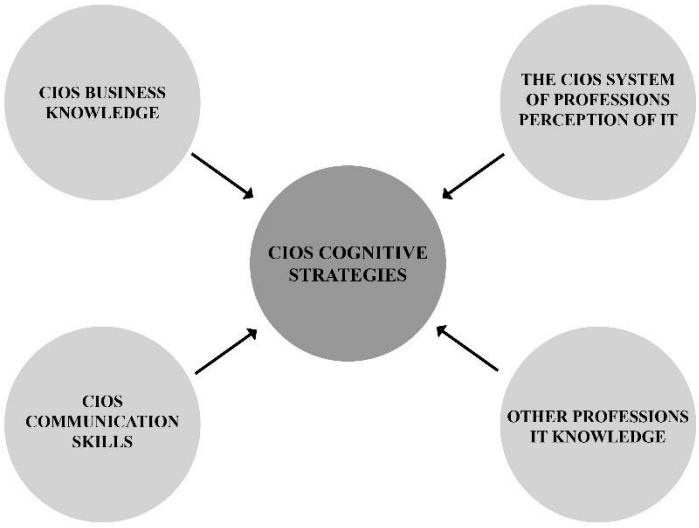

Figure 4. Throughout the history, there has been several factors that has affected the way CIOs use their cognitive strategies. These are as followed: 1) CIOs business knowledge, 2) CIOs communication skills, 3) Other professions IT knowledge and 4) The CIOs system of professions perception of IT.

Since the CIO profession is both aware of and emphasises the importance of understanding the business, one can argue that their business knowledge has increased since the professions creation. This could further imply that how the CIO profession uses cognitive strategies have changed over time, due to their changing professional knowledge. The CIO profession can now more easily understand other

professions problems, since they can utilise both the business and technological aspects of their professional knowledge. We therefore argue that the CIO professions cognitive strategies and its mechanisms have changed over time, they now diagnose and treat problems using both their technical knowledge and their business knowledge, rather than from a purely technological standpoint.

The second perspective is how the CIOs' systems' perception of IT changes over time, which has changed in the CIOs favour, as the respondents described how other professions have moved from viewing IT as a cost to an enabler, though there are still traces of a more traditional standpoint towards IT from those who are not part of the TMT. This changing perception has given the CIO profession opportunities to utilise their cognitive strategies in order to obtain more jurisdictional control due to that other profession are more susceptible. With the CIOs systems perception of IT changing in the CIOs favour, although not enough according to the respondents, the profession has become more influential and can make their voices heard. That CIOs have achieved more influence is further supported by Preston et al., (2008:1) and through the interviews. An example of this is that researchers in the early 80's argued that CIOs should be part of the TMT (Rockart et al, 1982) in order to add the most amount of value they can to the organisation. About 40 years later this study has shown that a majority of the respondents are part of the TMT. Due to the increased cultural dominance within the system the profession now has a forum in which they can apply reduction, treatment and metaphor in an early stage of discussions and decisions.

The third perspective that shapes the CIO professions cognitive strategies is that of other professions IT knowledge. A respondent exemplified that when other professions perform their diagnosis of a problem, they sometimes do not understand that IT is relevant. As a result of this the CIO profession then uses reduction as a mechanism to gain more influence, since there are no IT aspects within the subjective properties of the diagnosis done by other professions. The CIO is unable to effectively utilise their treatment mechanisms to these types of diagnosis performed by other professions since they are considered "*wrong*" in the eyes of the CIO. If other professions IT knowledge is higher and they do include IT aspects within their diagnosis, the CIO profession does not have to use reduction, they can now also use treatment if the other professions diagnosis is "*good enough*". Although other professions increased IT knowledge does not eliminate the need for reduction, rather, it would make treatment more applicable than reduction.

According to the respondents it is no longer just advantageous for the organisation that other professions understand IT – it is vital. To increase the IT knowledge and to make other professions see the possibilities with it, several respondents stated that it was their responsibility to increase their colleagues' IT knowledge. This could mean that the CIO profession teaches their own way of diagnosing problems. This could influence other professions to diagnose problems like that of CIOs, further increasing the possibility for the CIO professions to utilise treatment.

Other professions lack of IT knowledge does not affect how the CIO profession creates diagnoses or treatments, it does however affect how they must communicate their cognitive strategies to others. But as previously mentioned, how much they can perform either reductions or treatments depends on other professions IT understanding. As with an increased degree of IT knowledge, it becomes easier for the CIO profession to directly treat another professions diagnosis.

The fourth factor is the CIOs communicative skills, as this need has both been expressed in previous research (Gupta, 1991; Peppard, 2010; Krotov, 2015) and by the respondents. Interpersonal skills such as being communicative (Rockart et al, 1982; Pemberton 1992; Potter 2003; Kirkley, 2007; Kappelman et al, 2016), politically adept (Rockert et al, 1982; Krotov, 2015) and influencing (Enns et al, 2000; Enns et al, 2003) has been important characteristics for the CIO to develop in order for other professions to understand them. Due to that other professions do not have the same IT knowledge as the CIO does, the CIO profession has had to improve their business knowledge and how business people talk. This has been confirmed both within academia (Feeny et al, 1992) as well as by all respondents.

This study has on the other hand seen that the communicative aspects of the CIO profession have improved, due to that all the respondents were aware of the problem and which consequences it might bring. Although an important aspect of their cognitive strategies, the CIOs ability to communicate does not affect how they treat or diagnose problems, merely how they communicate their diagnosis to others. To decrease the knowledge gap, CIOs use metaphors to be pedagogic and make other professions understand. The metaphors are mostly used to explain how IT is an integrated part of the organisations, and to simplify IT. R19 exemplified this through a metaphor about an orchestra with a conductor and trumpets and clarinets, in which the respondent explained how a supplier and their IT-solutions synergised. The CIO professions increased business knowledge, together with other professions lacking IT knowledge, have made it so that metaphors are a commonly used tactic for communication with other professions.

Due to that both the CIO's communication skills and their business knowledge has increased, in parallel to that other professions perspective on IT has become more aligned with that of the CIOs and that their IT knowledge has increased, a trend emerges, the CIOs usage of reduction decreases whilst their usage of treatment increases.

All of the four aforementioned perspectives can be seen both in the literature and in the interviews, this study therefore argues that they all shape how the CIO profession utilises cognitive strategies. An overwhelming majority of the respondents were also part of CIO related networks, which also influences the cognitive strategies. The networks are however not a single factor which shapes the cognitive strategies, it is rather a place for the practitioners of the profession to gather and discuss and help each other deal with the four previously mentioned perspectives.

6.1.3 Abstraction

When the CIO profession emerged it was already a generalist role within IT. Being the head of IT meant that they had several different jurisdictions in their sphere of control, e.g. both the more traditional jurisdiction as data processing and telecommunication (Synnott, 1981 read in Benjamin et al, 1985), as newer jurisdictions as cost-effectiveness, including investments, operations cost, maintenance costs of hardware and software and responsibility for the staff within the IT department (Highbarger, 1988). This meant that the profession was already dealing with a lack of content within their profession. Although they were still expert within IT, often being viewed as technicians well versed within technologies rather than managers, so to some extent the profession could be viewed as a technical specialist with positive formalism.

Moving forwards, organisations realised the potential value of IT, parallel as researchers continued to argue regarding the need of a CIO in the TMT (Preston et al, 2008:1). Other executives and CEOs expected more from the CIO, which gave CIOs more influence and an increased business focus, rather than being focused on the technology itself (Preston et al, 2008:1; Yayla & Hu, 2014). With the increasing number of jurisdictions and responsibilities the CIO profession moved further away from positive formalism towards lack of content, now being in charge of IT, and also expected to have a business mindset and focus.

This trend can be seen today as well, as most of the respondents had a business focused mindset and were expected to help develop the business through IT solutions, this in combination with that all respondents proclaimed that they did not have expert knowledge within their jurisdictions, rather a well-developed holistic view of the organisation and its processes. This leads us to believe that the profession currently suffers from a lack of content and cannot be considered a specialist or having a positive formalism at all.

As previously mentioned the profession is vulnerable to attack by more specialised professions due to their residuality. It can be seen that the CIO profession has gained more jurisdictions over time, and that

it does not necessarily stand to stop doing so any time soon. It is however not sustainable to keep increasing one's jurisdictional control (Abbott, 1988), which would mean that the CIO profession is bound to lose jurisdictions at some point. But, even if the profession does lose jurisdictions, we argue that it will remain a generalist, just less so than today.

6.1.4 Maintain Jurisdictional Control

Always having been a generalist that strives for even more jurisdictions and thus becoming more of a generalist, the CIO profession has always used division as their strategy to deal with their lacking abstract knowledge. This type of delegation can be traced back to its origin (Rockart et al, 1982; Highbarger 1988). An aspect of how CIOs maintain their jurisdictions can be found, although they divide tasks and areas beneath them, maintaining either formal or advisory jurisdictional control. As exemplified by R17, who stated that ze did not even possess 10% of zir subordinate's knowledge within their fields. By utilising this strategy R17 gives an example on which jurisdictions that can be delegated. The CIO profession therefore utilises a division strategy to delegate technical IT tasks and jurisdictions commonly associated with traditional IT, whilst keeping IT-business related jurisdictions for themselves.

Even though division has been the primary choice of strategy to deal with their increasing number of jurisdictions, the CIO profession have utilised some amalgamation at times. R16 stated that some jurisdictions, e.g. IoT, is more threatened than others. To protect these jurisdictions the CIOs instead present the jurisdictions and tasks as an integrated whole, instead of separate delegable parts. By doing this they are stating that it is either "everything or nothing". By doing this the CIO profession can protect and maintain their threatened jurisdictions from other professions. The systematisation of professional knowledge will create clearer jurisdictional boundaries, this in combination with more professions that are battling for jurisdictions will make it more difficult for the CIO profession to utilise amalgamation.

6.2 The profession is putting up a fight – but the odds are against it

There are different ideas of what a CIO should do, even within the profession itself. A challenge the profession is currently facing is that the practitioners have different views on what a CIO is, claiming that there might be two subgenres of CIOs, one that is technologically focused, and one that is business focused. With a respondent going as far as to say that those who are technologically focused are "*fake*" CIOs and should be called IT directors or something similar. This idea is further supported by Chun & Mooney (2009), who found that the CIO profession might be two different profession, a technology focused profession and a business focused profession. One could argue that the CIO's system of profession has already started to become more systematised than before, as can be seen by Chun & Mooneys (2009) study in which they found two professions within the CIO profession.

The ambiguity surrounding the CIO profession was present in its early days (Palmlund, 1997; Romanczuk & Pemberton, 1997), after the millennium shift (Leider & Mackay, 2007; Chun & Mooney, 2009; Gerth & Peppard, 2016) and is still shown to be the case according to the respondents. As previously mentioned the CIOs themselves, or in combination with the CEO, defined their role. This has made it so that it is difficult to know what the profession as a single entity actually does at times, since it is not only different between organisations, it is also different over time. Something that both the respondents expressed, but also something that can be seen throughout the literature (Gottschalk, 1999). CIOs responsibilities have changed over time, with different areas having attention paid to it, such as an increased focus on IT security after the terror attacks of September 11th, 2001 (Hinde, 2001; Ball, 2002). Or a more recent phenomenon that the respondents talked about, GDPR (General Data Protection Regulation), a new law to be introduced in the European Union (Datainspektionen, 2018).

Pratt et al. (2006) argue that professions have identities, these identities can be weak or strong. In their framework they present an important aspect of a professions identity, which is that the profession receives social validation by the public and their peers. This social validation often comes in the shape

of feedback, something that CIOs have receive very little of (Highbarger, 1988) historically, and something they still do not receive much of according to the respondents. This is something DeLisi et al. (1998) argued for already before the millennial shift, CIOs must increase their visibility in order to be successful. As pointed out by a few respondents, once the IT breaks or bugs are found, then complaints start pouring in. For example slow network, things that do not work, services that are not up to the user's expectations. These failures are not always a pure IT issue, it can often be the user who uses the program incorrectly, but the blame is still placed at those who are responsible for IT. Similar findings to what Peppard (2010) found in his study due to the other executives' IT savviness. Due to the lack of social validation and the ambiguity of the profession we believe that the CIO profession has a weak professional identity. According to Pratt et al. (2006), a profession with a weak professional identity will adopt an older identity when faced with adversity. This could be a reason for why the CIO profession might split into two different professions, a technologically focused and a more business focused, similar to what Chun & Mooney (2009) found. A study performed by Hoeve et al. (2014) found similar issues regarding the nursing profession, in order to remove the ambiguity surrounding the profession nurses must create a self-image and a stronger professional identity.

6.3 The future of the Chief Information Officer profession

Because of the systemisation of professional knowledge, this study argues that the CIO profession will, sooner or later, be broken down into two separate professions. When the professional knowledge is systemised, the CIO profession will lose business jurisdictions. Even if this study cannot tell when this is happening, it can tell us why – because of these following four arguments.

The ambiguity of the profession. Previous research is filled with examples of challenges caused by the profession's ambiguity. This ambiguity is due to other professions' lack of IT knowledge, the CIOs lacking communication skills and, their business knowledge. This has resulted in other professions having mismatching expectations about the CIO, leading to countless of failures which has caused the CIO professions to suffer a high turnover rate. This baggage is ever present whilst the profession keeps elbowing its way forward amongst the other professions within the system, a history that cannot be dismissed or buried, for it is bound to resurface. Once the professional knowledge is systemised the CIO profession might find itself in an unfamiliar landscape in which its power has been reduced.

Two professions in one. Both the previous research and the respondents display the existence of two professions within the CIO profession, one with a technical focus and another with a business focus. The respondents have been certain of that the business focused CIO is "the real deal". There is no question about that there exists an internal conflict within the profession. The differences between the two different professions will become apparent once the profession knowledge is further systemised, and thus a divide will occur.

Lack of professional identity. Due to that the CIO is not remembered as the critical component for success, rather as the root of all IT related problems, their social validation and feedback suffer. Due to their weak professional identity, the CIO profession is likely to regress back to its former state as the head of IT, not necessarily business development through IT. Since both the professionals and the literature describes a scenario whereby the CIO profession is already divided, the CIO would regress and become the technically focused profession.

More specialised professions are emerging. The CIO profession has reached a state in its evolutionary processes in which their influence permeates entire organisations and the profession can be considered a specialist at being a generalist. For the longest time this has been accepted and encouraged due to the changing IT perception, viewing IT as a strategic resource; until today. At the horizon, the CIO profession can see other ships appearing, with untainted baggage and a strong tailwind, professions such as the CDO are approaching. This study therefore shows that the CIO professions business jurisdictions, which other professions look upon with longing eyes, will be lost.

6.4 Implication for research

This study, unlike the majority of studies in the CIO field, has viewed the CIO from a professions viewpoint, as an independent entity outside of organisations, in relation to other professions from a systems perspective. This to understand its evolution and future in a new dimension. This study has therefore expanded the CIO field by showcasing the evolutionary process, with an increased understanding of its potential future. By using this approach, this study has contributed with an increased knowledge within the academic fields of IT governance and MIS. This by demonstrating how the changing perception on IT together with other professions increasing IT knowledge makes it so that the CIO's ownership of IT governance is to some extent questioned. This is therefore a contribution to the research field of IT governance by highlighting how the impending IT executive changes will affect the shape and performance of organisations IT governance.

The study has also contributed to the field of professions research, since there exists a limited amount of studies performed within the IT discipline and on a general executive level. This study has also highlighted how professions on an executive level is affected by changing IT perceptions. This by demonstrating how the CIO profession has undergone reskilling since it origin in the 80's, until today, and tomorrow. By doing that, this study has contributed with a perspective on how managers within the IT discipline has been affected throughout history. By creating the condensed version of Abbotts (1988) framework found in Table 1, this study has also contributed with an illustrative framework, which can be directly applied to any profession. The analytic model used and chosen methodology is an example of how one can research a profession evolution, both its past, present and future.

However, there are some criticisms towards the chosen framework that was discovered during the study's process. One of Andrew Abbott's (1988) arguments for how professions act is that they always strive for an increased amount of control, in which the result is an increased level of abstract knowledge. This study questions whether this line of thinking is applicable for professions whose purpose is to be generalists. This would mean that a generalist profession that requires a holistic perspective in order to perform their work would always be subject to attacks by more specialist professions.

6.5 Implication for practice

We have studied the phenomenon of a profession as a separate entity in relation to other professions in a system. When it is stated that the CIO professions days are numbered or that it will regress, this would only apply to the profession. The professionals however do not necessarily need to be impacted by it at all in their daily life. As they possess knowledge that is sought after and they live in an era in which the IT knowledge of others is increasing. We believe that several respondents represent this new emerging profession – they are merely camouflaged as CIOs for now.

Based upon the results, organisations will be interested in specialised roles, such as the CDO. This can mean new challenges since the question remains where the jurisdictional boundaries will be drawn once the professional knowledge is systemised. This study therefore shows that organisations are in need of understanding the systematisation, in order to create clearer expectations and boundaries between colleagues at an executive level.

Furthermore, this study highlights four factors that shape the CIO profession's cognitive strategies. The profession should utilise them to further expand and maintain their jurisdictions in their work. Both through expanding upon their own business knowledge and communication skills, but also keep in mind other professions IT knowledge and their perspective on IT. We also believe that these four factors would be applicable to other IT professions when they interact with more business focused professions.

6.6 Avenues for future research

This study's purpose has been to understand the evolutionary process of the CIO in a system of professions. Although we believe that future research could add further perspectives to this, such as how the CEO views the CIO within this system. By doing this, potential mismatches in expectations and both professions perception of the other professions could be identified and examined. A proposed study would be qualitative interviews with CEO to investigate their perception on the CIO.

This research has limited itself to only understand how the CIO profession has evolved in a system of profession at an executive level. Future research could expand upon this with other profession that is not C-level executives, but still in the CIO's system of profession, such as e.g. enterprise architects. A proposed study would be to investigate the system of professions within the IT discipline by mapping how the CIO delegate tasks to other professions. This with the purpose to add another dimension to understand the CIO profession's system.

Apart from the previously mention implications of how other professions IT knowledge have affected the CIO professions communication skills, we argue that future research should be done on how the CIO profession utilises their cognitive strategies and other professions lack of IT knowledge as a tool for competitive advantage. In addition, how the IT comprehension can be seen as either a resource or a limitation today, but also possible opportunities and threats for executives within the IT discipline could be researched. A proposed study would be to interview CIOs in order to understand how their cognitive strategies are used in practice and how they are used as a tool for competitive advantage.

A final perspective worth researching, according to us, is how the CIO's academical education impacts the profession. Another aspect Andrew Abbott (1988) mentions is the importance for a profession to have formal profession knowledge and having a prestigious academia behind it. This study has shown some indications in Table 2 that there is a no coherent academia behind the CIO profession. As can be seen by the differing educational background the respondents had. There is however not enough data for any meaningful conclusions to be drawn, we therefore argue that future research could look upon this though a quantitative study with a higher sample of CIOs.

6.7 Limitations

The first limitation this study has is the systems limitation. This study has limited itself to understand how the CIO profession interacts with other executive professions and have thus excluded other profession beneath the CIO. Those professions can for example be the chief architect or enterprise architects, professions that might have a stronger relationship with the CIO profession.

Another limitation has been that the analytic model has used both normative and descriptive research. This has made it so that it has been difficult to see how cognitive strategies were used, this study therefore focused on factors that impacted the cogitative strategies and how they were shaped. This mix of normative and descriptive data has therefore been a limitation.

Since this study is one of the first of its kind within the CIO field, a limiting factor is previous research which has studied the role, not the profession. Although the role research has been aggregated and analysed to look for profession aspects, it has still been a limiting factor.

One last limitation that has been identified is that all respondents work, or have recently worked, within Swedish organisations. The country's digital maturity is bound to be either lower or higher than others. This could mean that this study's findings are not representative for the profession at an international level. This in combination with that the majority of previous research is from American researches published in American journals could also create a misrepresentative version of the profession. Though, in our defence, a study that does not face these limitations is in our opinion yet to be done.

7. Conclusion

This study set out to investigate the CIO's evolutionary process in a system of professions, and what lies ahead of it. Through the empirical findings, we can see that the CIO profession started its journey as a technologically responsible profession in charge of IT and technologies, such as e.g. telecommunication. The profession has since then moved towards a more business focused profession due to being considered the head of IT, an area which has the potential to give competitive advantage to organisations. All 19 interviewed CIOs, being formerly or currently employed in Swedish organisations within different industries, supported the idea that the profession is moving even further away from the technical jurisdictions towards business jurisdictions. However, this research shows that these business jurisdictions is about to be a distant memory for the CIO profession.

The profession of the Chief Information Officer is not only threatened, it is under attack. This study shows that the CIO's system of professions will have an increased systematisation of professional knowledge. This means that the CIO profession will regress into becoming a more technical focused profession due to the following four reasons; its lacking professional identity, the professions ambiguity, the two identified professions within the scope of the CIO and the appearance of more specialised professions such as the CDO.

Even though several arguments point towards that the CIO profession's days are numbered as future changes will make the profession lose jurisdictional control areas, when this is happening cannot be said. However, one thing is for sure; it is not a question about if the profession will lose jurisdictions, it is a question about when.

This study contributes within several research areas. It points out that researchers should be aware of the changing ownership within IT governance, since the CIO profession is about to change and more actors are getting involved in these types of questions. A new perspective and deeper knowledge within the CIO professions current and future state has been achieved, as requested by previous research within the MIS field. The findings also contribute with knowledge within profession research by investigating the CIO profession as an executive and generalist within the IT discipline. This by identifying how the profession has reskilled historically, but also by highlighting criticism to Abbott's (1988) framework when investigating generalist professions.

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Appendix 1

Journal	Nr.	%
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Appendix 2

Intervju för examensarbete – yrkesrollen Chief Information Officer

[redacted]

Hej [redacted]

Mitt namn är Erik Högberg och tillsammans med min studiekamrat Hampus Sjöman studerar vi vår sista termin på masterutbildningen IT Management på Göteborgs universitet.

Anledningen varför vi skriver till er är angående vårt examensarbete, där vi vill skapa en djupare förståelse om yrkesrollen Chief Information Officer och vilket ansvarsområden som inkluderas i professionen.

Vi anser att det hade varit mycket intressant att få komma i kontakt med er någon gång under mars för en intervju, och därmed höra era tankar kring rollen.

Vi förstår att ni har mycket på agendan, men vi hade verkligen uppskattat om vi fick komma i kontakt med er för antingen en fysisk intervju eller via dator/telefon.

Tack på förhand och ser framemot att höra från er.

Med vänliga hälsningar,
Erik Högberg och Hampus Sjöman

Appendix 3

Information och medverkande vid intervju

Följande intervjun sker i kursen *Masteruppsats i informatik TIA019* på Göteborgs universitet och kommer att hantera frågor kring professionen Chief Information Officer (CIO). Syftet med denna intervju är att skapa en djupare förståelse kring professionen CIO samt dess framtida utformning.

Utöver intervjun kommer även ett frågeformulär skickas till dig kring demografiska fakta.

Med detta medgivande godkänner du som respondent att du har fått information om och accepterat följande delar:

- Genom anonymitet kommer det inte gå att spåra någon respondent till något specifikt svar.
- Du kan när som helst under intervjun välja att avsluta.
- Under intervjun kommer en ljudinspelning att göras. All den insamlade informationen kommer endast att användas i forskningssyfte, vilket även kan innebära framtida forskning utöver denna specifika studie.

Namnteckning

Namnförtydligande

Datum och ort

Respondentnummer