

# Professional accountability: which business model seems to be the suitable context?

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A theoretical reflection on the context of professional  
accountability by using business models in healthcare

## Master thesis

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## Preface

This Master thesis is the final part of my study Business Administration with the master specialization Organizational Design & Development at the Radboud University in Nijmegen. This thesis on the suitable context for professional accountability by using business models was obviously the most interesting, educative and challenging period of my study. It was dr. Dirk Vriens who introduced professional accountability during the OD topic market in November 2017. Professional accountability was new to me which always challenges me most. Another challenge was my preference for a Master thesis that is totally based on theory, because I only have experience with writing an empirical Bachelor thesis. Writing this Master thesis took me much time, effort and motivation, but always with great enthusiasm and curiosity. It was very interesting and educative to broaden the existing literature on professional accountability by business models, because this link was not clearly investigated earlier. I am very glad that I got the opportunity to contribute to the literature on professional accountability. In my opinion, this topic remains relevant in the future because professionals in healthcare are called to account as never before. Fulfilling this task properly in organizations with the appropriate business model(s) can lead to an important value to our society. Therefore, research on professional accountability and business models should continue.

For this Master thesis, I particularly would like to express my gratitude to my supervisor dr. Claudia Groß for her feedback, advice and guidance throughout the process. Besides, my thankfulness goes to dr. Dirk Vriens as a second examiner for providing me feedback, remarks and alternatives in order to improve this Master thesis. I also want to thank my fellow students Corien Kromkamp and Marloes Kuntze for criticizing my (large) concept versions. Additionally, my gratefulness goes to my family and friends who always supported me during this Master thesis.

Ireen Korten

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## Abstract

In the last decades, professionals in healthcare are increasingly forced to show accountability in their work as a remedy for untrustworthy actions (O'Neill, 2002). It seems that we can no longer ignore professional accountability in our society. This accountability can be distinguished in calculative, narrative and conditional accountability. Each form might have advantages, disadvantages and conditions. The literature suggests that the conditions could be relevant for the context for professional accountability. However, these conditions are presented separately in the literature. Whether and how each form works best in a particular context, where the conditions are presented together, is not clearly researched yet. Perhaps there is, as each form has (dis)advantages and conditions, a specific context suitable. A more fine-grained discussion of the conditions for professional accountability provides a better understanding of the context under which each form of professional accountability works best. To reach such a fine-grained understanding, this research elaborates on the conditions of professional accountability by reflecting on the three business models of Christensen, Grossman & Hwang (2009). These business models are the value added process (VAP), the facilitated network (FN) and the solution shop (SS) (Christensen et al., 2009). This typology can be a groundbreaking prescription for a redesign in healthcare where multiple and mixed business models are used nowadays (Christensen et al., 2009). These business models take into account the context by providing a macro perspective to the literature on professional accountability, that seems to be described from a micro perspective. In addition, the link between professional accountability and business models creates new insights in redesigning healthcare. Besides, the existing literature already indicates that the conditions of professional accountability have coherence with the characteristics of business models. To investigate the link between professional accountability and business models, the following research question is formulated: *“What is the context under which the different forms of professional accountability work best?”*. To answer this research question, academic literature on professional accountability and business models is collected, read and reflected upon. This research contributes to theory by providing overarching names to the conditions of professional accountability and showing a collection of the literature per element and for all elements of professional accountability. This research also presents a compilation of the characteristics of business models by various authors, an overview of all elements of professional accountability with all characteristics of business models, the suitable context/business model for each form of professional accountability and overviews of all links.

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## 1. Introduction

Every day we read of aspirations and attempts to make business and professionals more accountable. Professionals are forced to show accountability in their performance and conduct as a remedy for untrustworthy actions (O'Neill, 2002). Professional scandals, like the case of the ex-neurologist E. Janssen Steur who was sentenced for deliberately misdiagnosing diseases and was acquitted due to his addiction to pills, create distrust (Redactie de Volkskrant, 2016). We need trust because we have to rely on professionals “acting as they say that they will” (O'Neill, 2002, p.1).

Professionals can be accountable in different ways. The form and extent of professional accountability have been criticized by many authors (for an overview, see Vriens, Vosselman & Groß, 2016). In particular, calculative accountability: the way professionals work conform standards and procedures to accomplish predefined results (Vriens et al., 2016). This form attempts to measure the performance of professionals (Kamuf, 2007) but calculative accountability also has several negative outcomes for professionals, clients and society (Vriens et al., 2016). Professionals might feel alienated from their work (Banks 2004; O'Neill 2002), can be stimulated to instrumental behavior (Messner 2009; O'Neill 2002, in Morris and Vines, 2014; Power, 1997; Roberts 2001, 2009; Schwartz, 2011) and seem to have less opportunities to communicate (O'Neill, 2002).

Hence, there is a need for alternative forms of professional accountability. One of these forms is narrative accountability where professionals interact and construct meaning with others about reasons for conduct (Vriens et al., 2016). This form of accountability creates the possibility to communicate and can stimulate professional discretionary judgement (O'Neill, 2002; Vriens et al., 2016). However, it is “not suffice in creating confidence to a wider public” (Vriens et al., 2016 p.2) and it is hard for non-professionals to understand the reasons for conduct (Vriens et al., 2016).

Therefore, Vriens et al. (2016) came up with a second alternative form, namely conditional accountability. This form takes into account the conditions for professional accountability to realize professional conduct and might help to place trust in professionals (Vriens et al., 2016). These conditions relate to the goals set for conduct and the infrastructural arrangements of the organization that influence the way professionals work is realized (Vriens et al., 2016). Information about these conditions can easily be accessed and conditional accountability reckons with the context wherein the professional works (Vriens et al., 2016). However, this form might not monitor professional conduct (Vriens et al., 2016) and organizations with conditional accountability could have unclear measurements (C. Groß, personal communication, March 21, 2018).

To summarize, there seems to be three different forms of professional accountability and each of them might have their own advantages and disadvantages. So, the existing literature indicates that there are proponents and opponents for calculative, narrative and conditional accountability.

In addition, the literature provides a few conditions under which the forms of professional accountability might work best. These conditions seem to relate to the context, processes, relations, skills, goals and results. For example, calculative accountability can be applicable for situations that are not context-specific and might relate to individualizing processes in organizations that are based on standards and instrumental relations (Roberts, 2001; Vriens et al., 2016). The narrative and conditional accountability can be appropriate for context-specific situations and interdependence relations (Roberts, 2001; Ubels, 2015; Vriens et al., 2016), but these two forms have different goals. The narrative accountability aims at improving care of the (specific) patient (Peterkin, 2011) and the conditional accountability has the objective to realize societal value (Freidson, 2001; Koehn, 1994; Vriens et al., 2016). Even though the existing literature mentions these conditions, they are presented separately by many authors of various sources and dates. The conditions have not yet been collected together in a context. One way of presenting these conditions together in a context is by using business models. A well-known author of business models in healthcare is Christensen (2009). According to Christensen et al. (2009), a business model of an organization is an interdependent system that consists of a value proposition, profit formula, processes and resources. Christensen et al. (2009) elaborate further on business models by making a distinction between three substantial different business models in healthcare. First, the value added process (VAP) transforms inputs of resources into outputs of higher value by using repetitive actions to realize efficient and standardized treatment (Christensen et al., 2009). Second, the facilitated network (FN) focuses on systems where customers can buy and sell by linking clients and expanding this network (Christensen et al., 2009). Third, the solution shop (SS) aims at solving unstructured problems where experts use trial-and-error processes (Christensen et al., 2009).

The three business models enumerated by Christensen et al. (2009) have their own characteristics and outline a particular situation or context. This distinction is needed in order to make healthcare simpler, accessible and affordable for patients. Nowadays, general hospitals and general practitioners seem to have multiple and mixed business models which results in various negative consequences. Professionals suffer from increasing work stress, patients have high waiting times and organizations make inefficient use of their technology (Christensen et al., 2009).

## **1.1 Problem formulation and research question**

The existing literature on professional accountability shows a distinction between calculative, narrative and conditional accountability and each of these three forms seems to have their own advantages and disadvantages. This literature also outlines a few conditions for the forms of professional accountability. These existing insights illustrate that these conditions, like processes, relations and goals, could be relevant for the context of professional accountability. While current literature already points out these various conditions, they are presented separately among the literature by many authors of various sources and dates. Whether and how each form of professional accountability works best in a particular context, where conditions are presented together, is not clearly researched yet and could be interesting to investigate. As each form of accountability has its own (dis)advantages and relate to particular conditions, there might be, just like the contingency approach, a specific context suitable for each form of professional accountability to be fully appreciated. Therefore, a more fine-grained discussion of the conditions for professional accountability can provide a better understanding of the context under which the calculative, narrative and conditional accountability work best. To reach such a fine-grained understanding, this research elaborates on the conditions by reflecting on the three business models of Christensen et al. (2009). By using business models as an expansion to the literature on professional accountability, a macro perspective can be applied to link each element to one another in an organization. This in contrast to the micro perspective that seems to be used by professional accountability. Besides, the link between professional accountability and business models might create new insights in the current debate about the restructuring of the healthcare sector. Lastly, the characteristics of the business models of Christensen et al. (2009) might have similarities with the conditions of professional accountability. See also the next paragraph for a more extensive explanation of the choice for the business models of Christensen et al. (2009) in this research.

As already mentioned, this research enlarges the existing literature on professional accountability by investigating the context under which the different forms of professional accountability work best. This context is researched by using the business models of Christensen et al (2009). Therefore, the research question is formulated in the following way:

**“What is the context under which the different forms of professional accountability work best?”**

## **1.2 Scientific and practical relevance**

This research has an essential scientific relevance to the literature on professional accountability. This literature mentions the different forms of professional accountability and the (dis)advantages of each form. In addition, the literature shows particular conditions that might be appropriate for each of the three forms of professional accountability. However, while literature shows the relevance of these conditions (which are presented separately), when each form of professional accountability works best in a particular context (where conditions are presented together) is not clearly researched yet. Hence, this research contributes to a theoretical development of the conditions of professional accountability by investigating the context. This is performed by extending and explaining professional accountability in relation to business models. In particular, the business models of Christensen et al. (2009) are used. This typology is valuable because it can be a groundbreaking prescription for a redesign in healthcare (Christensen et al., 2009). Christensen (2009) was the first who came up with the term “disruptive innovation” due to multiple and mixed business models in healthcare and his distinction is one of the most popular theories in academy (Almaazmi, 2017; Dreher & Glasgow, 2010). Besides, the context of healthcare can be relevant because it delivers an important value for society. Providing this value in a proper way can be framed as an organizational design challenge (A.A.J. Smits, personal communication, November 23, 2017). The business models of Christensen et al. (2009) are relevant for three reasons.

First, the literature on professional accountability is described at micro level due to the used perspective of the professional. A macro level can be used to provide insight in the elements that are linked to one another in an organization. Therefore, the perspective of the organization and its business model(s) is carried out, that takes into account the context for professional accountability.

Second, providing insight in the link between professional accountability and business models can be seen as an addition to the current debate about the redesign of the healthcare sector. According to Christensen et al. (2009), a restructuring is needed to make healthcare simpler, affordable and accessible. Nowadays, general hospitals and general practitioners might deal with multiple and mixed business models that create internal incoherence and commingled functions (Christensen et al., 2009). Hence, general hospitals and general practitioners should be restructured by splitting their activities in the three different business models. This research takes the business models into account by focusing on the perspective of the professional. The research investigates the appropriate form of the accountability of the professional in which of the three business models.

Third, the literature on professional accountability already shows that the few conditions of each form of professional accountability seem to have some cohesion with the characteristics of the business models of organizations. Conditions like the processes, relations and goals can be related to the characteristics of the three business models of Christensen et al. (2009).

Aside from the scientific relevance, this research also has practical relevance for society. The outcomes of this research can provide guidelines for organizations in applying the best workable form of accountability for their professionals. Based on the particular business model(s) and the characteristics of the organization, the most applicable form of professional accountability can be used. Therefore, the organization can create the appropriate value to society. However, this research has not the direct intention to use the knowledge in practice (Vennix, 2010) and it might not solve concrete problems for organizations. This research is particularly aimed at the expansion of knowledge (Easterby-Smith, Thorpe, Jackson & Lowe, 2012) of professional accountability by business models to investigate the suitable context for each form of professional accountability.

### **1.3 Outline of the research**

This research consists of a theoretical framework (chapter 2), a theoretical reflection (chapter 3), a theoretical analysis (chapter 4), a discussion and conclusions (chapter 5).

The theoretical framework provides a theoretical background of professional accountability and business models. Professional accountability is described by the definitions of a professional, professional work and professional accountability and explaining the parties, the forms, the characteristics, the advantages, the disadvantages and the conditions. Business models are expounded by the definitions, the general characteristics, the specific types and the characteristics.

The theoretical reflection shows the research approach, the research design and analysis, the research ethics and the possibilities and limitations of the research approach.

The theoretical analysis investigates the suitable context by comparing the elements of each form of professional accountability with the characteristics of each type of business models.

The discussion and conclusions have the goal to address the theoretical implications, the practical implications, the reflection on the limitations of the research, recommendations and directions for future research and the conclusions. The conclusions have the objective to answer the research question and reflect upon the scientific and practical relevance of this research. This is accomplished by summarizing and referring to the most important earlier findings.

## 2. Theoretical framework

This chapter outlines a theoretical background of the two key concepts of this research: professional accountability and business models. Professional accountability is discussed in paragraph 2.1 till 2.6. Business models are described in paragraph 2.7 and 2.8. This theoretical framework starts with an explanation of what is meant by a professional, professional work (2.1) and professional accountability (2.2). Thereafter, professional accountability is further elaborated by mentioning the parties (2.3) and the forms and characteristics (2.4). Besides, the advantages and disadvantages (2.5) and the conditions of the forms of professional accountability are provided (2.6). Then business models are expounded by appointing the definitions, the general characteristics (2.7) and the types and the specific characteristics (2.8). See Appendix 1 for an overview of the literature on professional accountability and business models as presented in this chapter.

### 2.1 A professional and professional work

Before the first key concept, professional accountability, is explained, this paragraph shows different perspectives of two basic concepts: a professional (2.1.1) and professional work (2.1.2).

#### 2.1.1 *A professional*

The view on professionalism seems to have changed during the time. Evetts (2014) argues that professionalism can be defined by the normative view, the ideological view and the discourse view.

The first phase is the normative view on professionalism (Evetts, 2014). This perspective implies that professionals should work towards a certain norm; occupational control over work practices and procedures (Evetts, 2014). To fulfill a norm, the competencies of professionals are “assumed to be guaranteed by education, training and sometimes licensing” (Evetts, 2014, p.35). In line with this reasoning, Freidson (2001) also focuses on the relevance of knowledge and expertise of professionals where education and training are functional requirements. Freidson (2001) does not mention the terms ‘normative value’ or ‘occupational value’ but he argues that “occupational control of work (by practitioners themselves) is of real importance for the maintenance of professionalism” (Freidson, as cited in Evetts, 2014, p. 36). Similar to Evetts (2014) and Freidson (2001), Muzio, Brock and Suddaby (2013) argue that the knowledge, occupations and characteristics of a professional are relevant to fulfill a function in society (the so-called

functionalist approach). Seeing professionals as a particular occupation or institution with specific characteristics is also in line with Banks' (2004) essentialist approach. This approach identifies the properties that characterize professionalism and professionals (Parsons, 1939; Siegrist, 1994). Koehn (2006) mentions the specific characteristics of professionals:

1. They are licensed by the state to perform a certain act.
2. They belong to an organization of similarly enfranchised agents who promulgate standards and/or ideals of behavior and who discipline one another for breaching these standards.
3. They possess so-called 'esoteric' knowledge or skills not shared by other members of the community.
4. They exercise autonomy of their work, which is work that is not well-understood by the wider community.
5. They publicly pledge themselves to render assistance to those in need and as a consequence have special responsibilities or duties not incumbent upon others who have not made this pledge. (p. 56)

The second phase is the ideological view on professionalism and seems to be critical of the role of professionals (Evetts, 2014). This view assumes that professionals promote their own interests in terms of their salary, status and power (Abbott, 1988). According to Evetts (2014), the ideological view sees professionals as powerful and self-interested monopolies who strive for excessive competition. This view seems also in line with the strategic approach mentioned by Banks (2004). This approach focuses on the types of collective action on which groups of professionals rely and the identification of conflicts and relations between groups. Several theorists like Collins (1990), Parkin (1974,1979) and Torstendahl and Burrage (1990) theorize about how occupational groups gain power and status as part of their professional strategy. This view also might have similarities with the conflict and power framework from Muzio et al. (2013). This framework places power or dominance at the center of professionalism according to Muzio et al. (2013).

The third view sees professionals as a discourse of change and control and is a combination between the above mentioned normative and ideological view as stated by Evetts (2014). According to the discourse view, the professional needs authority and control over work processes, but should also facilitate change and interact with their clients (Evetts, 2014). Trust and confidence characterize the relations between professionals and clients (Evetts, 2014). Using the reasoning of discourse is also similar to the institutional perspective of Muzio et al. (2013). They argue that

“professionalization is a negotiated settlement which emerges from the interactions between different actors pursuing their own institutionalization projects” (Muzio et al., 2013, p.705).

### *2.1.2 Professional work*

Besides the different views on professionalism, the work of the professional is also discussed from various perspectives. Professional work can be seen as “specialized work [...] grounded in a body of theoretically based, discretionary knowledge and skill” (Freidson, 2001 as cited in Vriens et al., 2016, p. 3). According to Freidson (2001), the ideal-type of professional work has five elements:

1. A body of knowledge and skill officially recognized as based on abstract concepts and theories and requiring the exercise of considerable discretion.
2. An occupationally controlled division of labor.
3. An occupationally controlled labor market requiring training credentials for entry a career mobility.
4. An occupationally controlled training programme which produces those credentials, schooling that is associated with ‘higher learning’ segregated from the ordinary labor market and provides an opportunity for the development of new knowledge.
5. An ideology serving some transcend value and asserting greater devotion to doing good work than to economic reward. (pp.127,180)

Based on the above mentioned argumentation of Freidson (2001) about professional work, Vriens et al. (2016) argue that professional work relates to three characteristics. This ideal-type definition of professional work relates to 1) the application and development of specific knowledge and skills, 2) ‘intensive technology’ and 3) the dedication to a particular societal value (Vriens et al., 2016). First, Vriens et al. (2016) reason that professional work requires highly specific knowledge and skills through an extensive period of study and practice. Second, professional work might be related to intensive technology (Thompson, 2007). According to Thompson (2007), the intensive technology is a particular type of primary process in an organization that can be successful accomplished when the necessary capacities of professionals are available and when feedback from the object itself is provided. The theory of Thompson (2007) is the theoretical base of the business models used by Christensen et al. (2009) (the second key concept of this research). This is explained in more detail in paragraph 2.8.1. Third, a professional devotes to a specific societal value when conducting professional work. “It is a value that ought to be valued for its own sake –

not just any value” (Koehn, 1994, 1995 as cited in Vriens et al., 2016, p. 4). An earlier work of Freidson (1994) stated that profession refers to 1) controlling own work and 2) a set of institutions that is supported by a particular expertise. In line with this duality, Banks (2004) views professional work from the perspective of control and knowledge. She mentions that professional work is more related to knowledge and skills (interdetermination) than to rules and procedures (technicality). However, Banks (2004) argues that the focus on knowledge and skills is shifting to rules and procedures. She doubts if the focus on rules and procedures is adequate for professional work.

## **2.2 Professional accountability**

Professionals have to be accountable for their work. Banks (2004) mentions that accountability refers to be called upon to give an account of what a professional has done or has not done. She argues that accountability has always been important for professionals but the type of accountability that professionals perform is owned to clients or service users (Banks, 2004). She appoints that any professional is accountable for his own actions to people that make use of the services that the professional provides (Banks, 2004). Messner (2009) dives deeper into what is meant by these “people”. The subsequent paragraph elaborates further on the people to be accountable to. In line with Banks’ (2004) expression of the importance of accountability, Evetts (2003) emphasizes the need for accountability by arguing that accountability is one of the fundamental aspects of professionalism. O’Neill (2002) concretizes this importance by asserting that accountability is used as a remedy for the distrust in professionals. This distrust or “the crisis of trust” seems to be the consequence of scandals of the professionals (O’Neill, 2002; Vriens et al., 2016). As a result, professionals have increasingly been called to account the last decades (O’Neill, 2002; Vriens et al., 2016). According to Gray, Owen and Adams (1996), accountability is “the duty to provide an account (by no means necessarily a financial account) or reckoning of those actions for which one is held responsible” (Gray et al., 1996, p.38). Cooper and Owen (2007) also see a similarity with accountability and responsibility. They argue that when someone is accountable, it means “holding certain expectations about what this person or organization should be able and obligated to explain, justify and take responsibility for” (Cooper and Owen, 2007, at cited in Messner, 2009, p.1). Kamuf (2007) might have another perspective and argues that accountability creates confusion to what is already the bridge between calculation and narration. Accountability that refers to calculation indicates that objectivity, facts and evidences are relevant (Kamuf, 2007).

When accountability is affiliated with narration, then subjectivity, belief, discourse and language are important (Kamuf, 2007). Paragraph 2.4 explains what is further discussed in the literature as calculation and narration in relation to the different forms of professional accountability.

### **2.3 Parties of professional accountability**

As mentioned in the previous paragraph, professionals should be accountable to people (Banks, 2004). But what is meant by these people? Who are these people? This paragraph describes what has been argued in the existing literature as the people to be accountable to or the various parties of professional accountability. This paragraph also shows that some parties seem to be more relevant for a particular form of professional accountability. The specific forms of professional accountability that are used in this research are explained in the following paragraph.

Emanuel and Emanuel (1996) argue that professionals in healthcare are accountable to eleven parties. They refer to “individual patients, individual physicians, non-physician health care providers, hospitals, managed care plans, professional associations, employers, private players, the government, investors and lenders of capital and lawyers and courts” (Emanuel & Emanuel, 1996, p. 230). However, Emanuel & Emanuel (1996) argue that this list is not complete nor unchangeable.

Some of these eleven parties might be important for particular forms of professional accountability. Emanuel & Emanuel (1996) argue that hospitals, managed care plans and the government can be relevant parties for a form of professional accountability that might be characterized by efficiency, regulation, fixed and objective performance characteristics, standards and many providers. The government is one of the external parties according to Knutsen and Brower (2010). They argue that “organizations that acquire most of their resources from external sources such as government funders and major private foundations demonstrate a strong demand to fulfill instrumental accountability to these external resource providers” (Knutsen & Brower, 2010, p. 596). Besides, Emanuel & Emanuel (1996) assert that professional colleagues, organizations, associations and the patient are essential for a form of professional accountability that could be based on discussion and deliberation. Knutsen and Brower (2010) add that professional accountability relating to expression refers to internal parties of the organization. Lastly, Emanuel and Emanuel (1996) argue that the combination of hospitals, managed care plans, the government and patients seems to be relevant for a form of professional accountability that mainly focuses on the community, goals, interactions and expressions.

Checkland, Marshall and Harrison (2004) also describe the parties of medical practitioners. They argue that there is a long list of whom these professionals are accountable to. The list constitutes “patients and their advocates, employers, professional regulatory bodies, the courts, elected politicians, and the wider general public (as well as some that might be said to be arguable such as the media)” (Checkland et al., 2004, p. 130). Emanuel & Emanuel (1996) and Checkland et al. (2004) might be rather specific in arguing for the relevant parties for professionals in healthcare.

Messner (2009) divides parties in categories, which seems to be less specific than the enumeration by Emanuel & Emanuel (1996) and Checkland et al. (2004). First, Messner (2009) argues that professionals can be accountable for themselves. Second, accountability could also relate to the peers or supervisors of the professional (Messner, 2009). Third, de dominated literature presents that accountability might refer to shareholders (Messner, 2009). Fourth, professionals are accountable for their stakeholders: employees, customers and future generations (Messner, 2009).

Other theory, which can be even more abstract in defining the parties to be accountable to, are the SFIA-levels: the Skills Framework for the Information Age (SFIA Foundation, 2013-2017). This framework uses seven levels of accountability to provide insight in the professionals’ autonomy, influence, complexity and skills. The higher the level, the more autonomy, influence, complexity and skills. For example, the first level implies that the professional works on his own and interacts with his direct colleagues. The fifth level refers to a professional who influences the organization, customers, suppliers, partners and peers (SFIA Foundation, 2013-2017).

## **2.4 Forms and characteristics of professional accountability**

Paragraph 2.2 showed various definitions on professional accountability. The previous paragraph enumerated different parties to whom professionals can be accountable to and it is argued that some parties might be relevant for particular forms of professional accountability. Kamuf (2007) already stated that professional accountability can relate to calculation and narration. These two forms of professional accountability are further elaborated in this paragraph (2.4.1 and 2.4.2). Besides, a third form, that relates to the conditions for professional work, is explained (2.3.3).

### *2.4.1 Calculative accountability*

The first form of professional accountability is the calculative accountability (Vriens et al., 2016). According to Kamuf (2007), it refers to calculation and relates to what counts as an objective fact,

evidence, proof and number. Kamuf (2007) calls this the ‘computational accounting’. Vriens et al. (2016) mention calculative accountability when they refer to accountability “in the form of following procedures and rules or in the form of working to pre-determined targets or standards” (Vriens et al., 2016, p.1). This form seems to predefine professional conduct in fixed categories (Vriens et al., 2016). O’Neill (2002) argues that this form of accountability describes detailed administrative control by legislation, regulation, memoranda, instructions, guidance and advice.

#### *2.4.2 Narrative accountability*

The second form of professional accountability is the narrative accountability. This form can relate to narration or “the possibility of accounting for something through narrative” (Kamuf, 2007, p.251-252). This narrative form implies that professionals, in contrast to the calculative accountability, should not act in accordance to rules or fixed agreements. Professionals act “in the form of explaining to and discussing with others reasons for conduct in a way that allows (communicative) freedom” (Vriens et al., 2016, p.2). Kamuf (2007) argues that this narrative accountability is a loosely, subjective form that relates to belief, discourse and language.

#### *2.4.3 Conditional accountability*

The third form of professional accountability is the conditional accountability (Vriens et al., 2016). This form is developed after the calculative and narrative accountability and hence might be under conceptual level yet. It seems to be a response to both calculative and narrative accountability and their related “dilemma of professional accountability”, which refers to 1) the need for public accountability to guarantee trust and 2) the harm to professional conduct in current forms of professional accountability (Vriens et al., 2016). According to Vriens et al. (2016), the conditional accountability does not specifically focus on professional results (calculative accountability) or professional conduct (narrative accountability). It aims at the conditions for professional conduct and results. Vriens et al. (2016) argue that professional work is always performed in a particular social, organizational or societal context which conditions professional work. The general influencing conditions for professional work are the goals set for professional conduct and the infrastructural arrangements. The infrastructural arrangements can refer to the way in which professional work is structured, the practices and policies used to select, assess, appraise, monitor,

reward, sanction, motivate and develop professionals and their performance and the technological tools that are necessary for performing professional work (Vriens et al., 2016).

## 2.5 Advantages and disadvantages of the forms of professional accountability

The previous paragraph addressed that professional accountability can be divided in three forms. Each form seems to have advantages and disadvantages which indicates that there are proponents and opponents of each form. This paragraph describes what has been discussed as the advantages and disadvantages of the calculative (2.5.1), narrative (2.5.2) and conditional accountability (2.5.3). Table 1 summarizes the advantages and disadvantages of the three forms of accountability.

	<b>Calculative accountability</b>	<b>Narrative accountability</b>	<b>Conditional accountability</b>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>- Could have easy access to some aspects of professional work</li> <li>- Seems to be free of interpretation, faith and belief</li> <li>- Hard data can measure the performance of professionals</li> </ul>	<ul style="list-style-type: none"> <li>- Possibility to communicate</li> <li>- Opportunity to professional discretionary judgement</li> <li>- Might include context</li> </ul>	<ul style="list-style-type: none"> <li>- Could have easy access to information about conditions for conduct</li> <li>- Can fit criteria of intelligent accountability of O’Neill (2002)</li> <li>- Might include context</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>- Indicators do possibly not do justice to professional work; de-contextualization</li> <li>- Might lead to instrumental behavior, perverse incentives, self-interest, self-orientation and domination</li> <li>- Might lead to alienation</li> <li>- Less communication and interaction possible</li> <li>- Could decrease confidence in competencies and ethics</li> <li>- Less power/dominance possible</li> </ul>	<ul style="list-style-type: none"> <li>- Could not suffice in creating confidence to a wider public</li> <li>- Seems to be difficult to convey information about professional work to non-professionals</li> </ul>	<ul style="list-style-type: none"> <li>- Could need monitoring for controlling professional conduct</li> <li>- Might be doubtful if needed when clear calculative measurements are formed</li> <li>- Seems to have unclear measurements</li> <li>- Can have no control from outside, become expensive and leaves out financial necessities</li> </ul>

Table 1: The advantages and disadvantages of the forms of professional accountability.

### *2.5.1 Advantages and disadvantages of calculative accountability*

Paragraph 2.4.1 showed that calculative accountability can be characterized by calculation, control, rules, targets, protocols and fixed categories (Vriens et al., 2016; Kamuf 2007; O’Neill 2002).

This form could have various advantages. First, Vriens et al. (2016) argue that calculative accountability might create easy public access to some aspects of professional work. Second, as Kamuf (2007) describes, “numbers do not lie”: “numbers do not narrate, interpret, invent or make up the figures, they make no claim on faith or belief” (Kamuf, 2007, p. 252). Therefore, the third advantage is that hard data like this can measure the performance of professionals (Kamuf, 2007).

However, calculative accountability could also have disadvantages and it even seems one of the most criticized forms in the literature. First, Vriens et al. (2016) argue that calculative accountability does not allow professionals to respond to specific situations; the accountability of the professionals’ performance remains abstract. Therefore, it might be hard to fully capture and justify the decisions and actions of professionals in their work. As a second disadvantage, Power (1997), O’Neill (2002, 2014), Roberts (2001, 2009), Messner (2009) and Schwartz (2011) argue for the consequence of instrumental behavior and perverse incentives when professionals are accountable based on calculation and numbers. Hence, professionals could act in accordance to self-interest and have a self-orientation to others (Messner, 2009; Roberts, 2001) which could result in domination (C. Groß, personal communication, March 21, 2018). A third disadvantage is that calculative accountability might lead to alienation (O’Neill, 2002). O’Neill (2002) argues that each professional has a particular aim which seems not reducible to targets and following procedures. This results in a fourth disadvantage as stated by O’Neill (2002): there is less time to interact and communicate because they have to follow rules and standards. Banks (2004) argues for a fifth disadvantage: calculative accountability might cause less confidence in competencies and ethics of professionals. As a consequence, she claims for a sixth disadvantage: calculative accountability could be an attack on the power and dominance of the professional (Banks, 2004).

### *2.5.2 Advantages and disadvantages of narrative accountability*

Paragraph 2.4.2 presented that narrative accountability is characterized as a subjective form due to the possibility to discuss meaning about reasons for conduct (Kamuf, 2007; Vriens et al., 2016).

A related first advantage is that narrative accountability might create communicative freedom due to the interaction with others (Vriens et al., 2016). According to O’Neill (2002),

communication with whom accountable for is important for professional practice and to realize the aim. Communicating in ways that are open to assessment could be seen as a means for replacing trust in professionals. This opportunity to discourse meaning on assessment seems to create professional discretionary judgement (Vriens et al., 2016), that could be a second advantage of this form. A third advantage is that narrative accountability can include the context (Vriens et al., 2016).

However, a disadvantage of narrative accountability might be that it is “not suffice in creating confidence to a wider public” (Vriens et al., 2016 p.2). It might be difficult to construct meaning about professional conduct on higher levels of professional accountability, like the society. A second disadvantage is that what is meant by professional conduct is precarious for non-professionals due to the specific knowledge and skills (Vriens et al., 2016). The non-professionals are probably not familiar with the jargon of professionals which could be hard to understand.

### *2.5.3 Advantages and disadvantages of conditional accountability*

Paragraph 2.4.3 introduced the conditional accountability as a conceptual form which takes into account the conditions of the context for professional results and conduct (Vriens et al., 2016).

As a first advantage, Vriens et al. (2016) argue that conditional accountability has, like the calculative accountability, easy access to information about conditions for conduct but without the pitfalls. Second, conditional accountability could fit with the criteria of what O’Neill (2002) calls ‘intelligent accountability’. It requires “more attention to good governance and fewer fantasies about total control” (O’Neill, 2002, p.16). Good governance means that professionals can get some margin for self-governance of a form that is appropriate to their tasks (O’Neill, 2002). Third, conditional accountability allows for the situation the professional operates (Vriens et al., 2016).

However, Vriens et al. (2016) argue that conditional accountability might not monitor professional conduct because to some extent accounting for conditions could not show how professionals actually perform. A second disadvantage might be that when an organization has clear calculative measurements, taking into account the conditions is no longer needed (Vriens et al., 2016). A third disadvantage is that it can be unclear how to measure conditional accountability because some professionals might criticize their conditions (C. Groß, personal communication, March 21, 2018). This relates to a possible fourth disadvantage, namely the aspect that there might be no control from the outside on these conditions, which runs the risk of becoming expensive and leaves out financial necessities (C. Groß, personal communication, March 21, 2018).

## **2.6 Conditions of the forms of professional accountability**

Paragraph 2.4 presented that the literature on professional accountability distinguishes three forms: calculative, narrative and conditional accountability. Each form seems to have advantages and disadvantages which indicates that there are proponents and opponents of each form. However, when each form can work best in a particular context is not clearly investigated yet in the literature. Perhaps there is, like the contingency approach, a particular context suitable for each form of professional accountability. This research investigates this context by using the business models of Christensen et al. (2009). These business models are described in paragraph 2.7 and 2.8. One step before investigating the suitable context is to discuss under which conditions each form of professional accountability might work best. The existing literature on professional accountability already provides a few conditions that indicate that a particular context could be relevant. However, these conditions are separated among the literature by many authors of various sources and dates and some without clear overarching names. This paragraph shows what has been discussed as the conditions of calculative (2.6.1), narrative (2.6.2) and conditional accountability (2.6.3). This research presents the conditions together and with overarching names that are formulated by the researcher. These overarching names are the context, processes, relations, skills, goals and results.

### *2.6.1 Conditions of calculative accountability*

As already asserted in paragraph 2.5.1, calculative accountability seems to have the disadvantage of de-contextualization: it might abstract professionals to perform in specific situations (Vriens et al., 2016). In other words, this form of accountability probably does not apply for context-specific situations. In conjunction with the setting, calculative accountability could be doubtful in complex institutional settings (O'Neill, 2014). For example, in complex circumstances, trust might not base on attitude and therefore has no relations that take the form of a hierarchical nature. Those who embrace calculative forms of accountability could have relations that (blindly) trust the higher party in the organization. So, calculative accountability is less appropriate for complex institutional settings. According to Roberts (2001) and O'Neill (2013), calculative accountability might relate to individualizing processes and processes with a genuine unit of account. Individualizing processes in organizations focus on normalizing, routinizing, and homogenizing aspects to meet standard outcomes (Roberts, 2001). In these processes, instrumental or external relations are involved, characterized by acting competitively (Roberts, 2001). Processes with a unit of account

are based on numbers (O'Neill, 2013). "Numbers are useful when we have a unit of account" (O'Neill, 2013, p. 14). It is possible to count money or patients, but many things that are important cannot be counted because there is no genuine unit of account (O'Neill, 2013). In addition, Robinson (2003) argues that efficiency and effectivity in the use of resources are important skills. Besides, individualizing processes are aimed at market related goals and market mechanisms (Roberts, 2001) or "well-defined economic markets" (Robinson, 2003, p. 173). Freidson (2001) argues that these goals are mainly focused on profit maximization. In line with these goals, Ubels (2015) mentions that calculative accountability refers to a situation where care is conceptualized in quantitative, measurable outcomes and performance indicators.

### *2.6.2 Conditions of narrative accountability*

Paragraph 2.5.2 assumed that narrative accountability might offer the opportunity to include the context in which the professional works (Vriens et al., 2016). Therefore, the researcher asserts that this form of accountability can apply in context-specific situations. In contrast to the calculative accountability, which relates to individualizing process, the narrative accountability refers to the socializing processes in organizations according to Roberts (2001). This type of process indicates subjectivity, interdependence relations, flow of communication and interaction, reciprocal interests and the opportunity to challenge situations (Roberts, 2001). The relation between narrative accountability and reciprocal interests is also confirmed by Ubels (2015). He argues that the focus on narratives in healthcare has a reciprocal perspective because the care does not "stop at the care receiver's end" (Ubels, 2015, p. 192). So, narrative accountability can relate to socializing processes and interdependence relations in organizations. Besides, Charon (2006) argues that professionals need six narrative skills or competencies when they perform narrative-based medicine. These skills include: "the exercise of the moral imagination, the practice of empathic presence and mindful listening, reading and interpreting complex texts, writing reflectively and telling complex clinical stories, reasoning with stories, and engaging in narrative ethics" (Charon, 2006 as cited in Peterkin, 2011, p. 396). Besides, Ubels (2015) argues that, in contrast to the calculative accountability which relates to quantitative outcomes of care, the narrative accountability could be related to the quality of care. This qualitative outcome refers to "the capability to time and again reconsider. It's not about the outcomes of the considerations, but about

the capability to reconsider” (Ubels, 2015, p.193). In addition, as Peterkin (2011) argues, the goal of narrative accountability is to improve care of the (specific) patient.

### *2.6.3 Conditions of conditional accountability*

According to Vriens et al. (2016), conditional accountability takes into account the conditions a professional works in: the goals and the infrastructural arrangements (structure, performance measurement, control, reward, motivation, development of practices and policies, and technology) of the organization. Therefore, the researcher assumes that conditional accountability is applicable for context-specific situations. Besides, conditional accountability relates to processes that “involves active enquiry – listening, asking questions, and talking – to which the relevance or accuracy of indicators can be understood in context” (Roberts, 2009, p. 966). This is because, as Vriens et al. (2016) put it, conditional accountability meets the criteria of O’Neill’s (2002) intelligent accountability: organizations create conditions to good governance and less control. In addition, the processes might be based on intensive technology. It indicates processes in which “a variety of techniques is drawn upon in order to achieve a change in some specific object; but the selection, combination and application are determined by feedback from the object itself” (Thompson 1967, p.17). This type of technology could relate to reciprocally interdependent activities (see also paragraph 2.8.1). The reciprocal character is coherent with interdependence relations according to Ubels (2015). In addition, Vriens et al. (2016) argue that professionals need work “that requires specific (esoteric/abstract) knowledge and skills, acquired through an extensive period of study and practice” (Vriens et al., p.3). Moreover, the goals set for professionals should refer the accomplishment of societal value, which is in line with Freidson (2001) and Koehn (1994) (Vriens et al, 2016). This could relate to both qualitative and quantitative outcomes.

## **2.7 Business models and general characteristics**

The previous paragraph described what has been discussed in the literature as the conditions of calculative, narrative and conditional accountability. Providing insight in these conditions are one step forward into the research of the appropriate context when each form of professional accountability works best. As already mentioned, these conditions are presented separately in the existing literature on professional accountability. Even though this research merged these dispersed conditions in order to simplify the comparison, the conditions are still not connected to concrete

organizations or one specific context. Hence, whether and how each form of professional accountability works best in a particular context is still not investigated yet. Therefore, this research elaborates on the conditions by reflecting on business models. In particular, the three business models of Christensen et al. (2009) are used to investigate the context. Christensen et al. (2009) describe three ideal-type forms of business models. The concept of business models is relevant as an extension on the current literature on professional accountability. First, the business models take into account the context by using a macro perspective to gain insight in the elements that are linked to one another in an organization. Second, linking professional accountability to business models can be seen as an addition to the current debate about the redesign of the healthcare sector where multiple and mixed business models are used. Third, the characteristics of the business models already seems to have some cohesion with the conditions of professional accountability. This paragraph mentions what business models might imply and provides its general characteristics.

Zott, Amit & Massa (2011) describe business models as both the content and the process of doing business. Business models can have a holistic perspective on firms and their business (both what and how), but the conceptualization of business models depends on the firm itself (Zott et al., 2011). It is about how firms create and capture value (Amit & Zott, 2001; Zott et al., 2011). Beattie & Smith (2013) and Teece (2010) also argue that business models relate to the way of doing business and delivering and capture value. But what are the content and process of doing business?

According to Christensen et al. (2009), a business model is an interdependent system that consists of four characteristics: a value proposition, profit formula, processes and resources. Christensen et al. (2009) state that the starting point of a successful business model is its value proposition: “a product or service that helps customers do more effectively, conveniently, and affordably a job they’ve been trying to do” (Christensen et al., 2009, p.9). To realize this value, the organization needs resources (like people, products and money) and processes; the way of working together to address tasks in a consistent way. Therefore, a profit formula, for example the required price, volumes and profit margins appears. This profit formula is needed to cover the costs of the required resources and the processes to deliver the value proposition (Christensen et al., 2009).

## **2.8 Types and specific characteristics of business models**

The preceding paragraph appointed various authors to identify business models and its general characteristics. For this research, the typology of Christensen et al. (2009) is chosen. Christensen

was the first one who came up with the term “disruptive innovation” and forms the footprints of the future (Dreher & Glasgow, 2010). Besides, as Almaazmi (2017) argues: “among the modern day theories of business and management, Christensen’s concept of disruptive innovation is one of the most popular theories among academic circles” (Almaazmi, 2017, p. 65). So, Christensen (2009) seems to be a well-known leader in innovation and uses a groundbreaking prescription for redesigning healthcare (Christensen et al., 2009). This redesign or disruptive innovation is relevant because general hospitals and general practitioners suffer from the negative outcomes of using multiple and mixed business models. According to Christensen et al. (2009), restructuring healthcare by splitting activities to business models could realize simpler, affordable and accessible healthcare. The theoretical base for the typology of Christensen et al. (2009) refers to the theory of Thompson (2007) and Stabell and Fjeldstad (1998). Both theories are explained (2.8.1 and 2.8.2) before describing the three types of business models (2.8.3) and their characteristics (2.8.4).

### 2.8.1 Theory of Thompson

Thompson’s (2007) overall goal is to understand organizational action. The difference in organizational action depends on the inside (nature of the primary process) and the outside (different characteristics of the environment). The inside of the organization is distinguished by three types of primary processes: the long linked technology, the mediating technology and the intensive technology. These processes differ in their level of dependency between activities in the primary process, namely: sequential interdependence, pooled interdependence and reciprocal interdependence. The primary processes also differ in the type of coordination that is needed for the activities: planning, standardization and mutual adjustment. Table 2 gives an overview of the cohesion between the type of primary process or technology, the level of interdependence and the type of coordination (Thompson, 2007). An example of a related type of organization is given.

Type of primary process/technology	Level of interdependence	Type of coordination	Example of organization
Long linked technology	Sequential interdependence	Planning	Production factory
Mediating technology	Pooled interdependence	Standardization	Telephone company
Intensive technology	Reciprocal interdependence	Mutual adjustment	Hospital

Table 2: The core aspects of the theory of Thompson.

First, organizations with a mass production assembly line seems to have a long linked technology. According to Thompson (2007), this technology implies sequential interdependence activities that follow up each other in a standardized way. Each activity can only be performed after a successful completion of the previous activity. The activities are coordinated by planning (Thompson, 2007).

Second, a telephone company is an example where the mediating technology can be used. The aim is to link clients or customers who are interdependent (Thompson, 2007). The mediating technology operates extensively and in standardized ways, which means that multiple clients or customers are distributed in time and space (Thompson, 2007). These activities should be pooled interdependent: each part contributes to the whole and each is supported by the whole (Thompson, 2007). This process is coordinated by standardization over time as stated by Thompson (2007).

Third, the intensive technology occurs in organizations like hospitals. The activities can be reciprocal interdependent: the output is the input for others. The execution of these activities might be based on the availability of capacities and feedback of the object itself (Thompson, 2007). Therefore, mutual adjustment should be needed to coordinate these activities (Thompson, 2007).

### *2.8.2 Theory of Stabell and Fjeldstad*

The bridge between Thompson (2007) and Christensen et al. (2009) seems to be made by Stabell and Fjeldstad (1998). Based on Thompson's typology (2007), Stabell and Fjeldstad (1998) distinct three value configuration models in order to understand and analyze firm-level value creation logic across a broad range of industries and firms. These models are the value chain, value shop and value network (Stabell & Fjeldstad, 1998). First, the value chain can relate to Thompson's (2007) long linked technology and delivers value by transforming inputs into products (Stabell & Fjeldstad, 1998). Second, the value shop links to the intensive technology and adds value by (re)solving customer problems (Stabell & Fjeldstad, 1998). Third, the value network seems to refer to the mediating technology and creates value by linking customers (Stabell & Fjeldstad, 1998).

### *2.8.3 Types of business models of Christensen*

Based on the theory of Thompson (2007) and the theory of Stabell & Fjeldstad (1998), Christensen et al. (2009) argue for three new different business models in healthcare. These business models are the value added processes (VAP), the solution shops (SS) and the facilitated networks (FN) (Christensen et al., 2009). The authors argue that these new business models should replace the

traditional business models that can be currently observed in the healthcare sector. These are the general hospitals and general practitioners. According to Christensen et al. (2009), the three new business models substitute for the traditional business models with the aim to make healthcare simpler, affordable, and accessible for patients. Table 3 gives an overview of the cohesion between the theories of Thompson (2007), Stabell and Fjeldstad (1998) and Christensen et al. (2009).

		Authors		
		Thompson	Stabell and Fjeldstad	Christensen
primary processes	Long linked technology	Value chain	Value added processes	
	Mediating technology	Value network	Facilitated networks	
	Intensive technology	Value shop	Solution shops	

Table 3: The relationship between the theory of Thompson, Stabell and Fjeldstad and Christensen.

#### 2.8.4 Specific characteristics of business models of Christensen

All three business models of Christensen et al. (2009) have a value proposition, profit formula, processes and resources. However, the difference between these business models can be made by their interpretation of these characteristics. This creates the specific characteristics of each business model. Table 4 gives an overview of the VAP, FN and the SS and their specific characteristics.

		Type of business model		
		VAP	FN	SS
Characteristics	<b>Value proposition</b>	Efficient and standardized treatment	Linking clients/experts	Solve unstructured client problems
	<b>Profit formula</b>	Standardization/economies of scale	Network scale/network composition	Expertise
	<b>Processes</b>	- Inbound logistics - Transformation - Outbound logistics	- Network promotion - Service provision - Keep infrastructure up and running	- Diagnose - Design - Implementation - Evaluation
	<b>Resources</b>	Nurses	Network professionals	Experts

Table 4: The three between business models of Christensen et al. (2009) and their specific characteristics.

First, the value added processes (VAP) could transform inputs of resources into outputs of higher value (Christensen et al., 2009). The value proposition can be realized by efficient and standardized treatment by using repetitive actions (Christensen et al., 2009; Thompson, 2007). Therefore, the profit formula seems to be accomplished by standardization or economies of scale (Christensen et al., 2009). To realize this, nurses fulfill the action because the activities are straightforward. The processes are inbound logistics, transformation and outbound logistics (Christensen et al., 2009).

Second, the facilitated networks (FN) “comprise institutions that operate systems in which customers buy and sell, and deliver and receive things from other participants” (Christensen et al., 2009, p.24). The value is created by linking clients (Christensen et al., 2009). Hence, network scale and composition might be needed (Christensen et al., 2009). The processes are network promotion, service provisioning and keeping the infrastructure up and running (Christensen et al., 2009).

Third, the solution shops (SS) “are institutions structured to diagnose and recommend solutions to unstructured problems” (Christensen et al., 2009, p.20). Therefore, expertise seems to be needed by experts. They use trial-and-error processes relating to diagnose, design, implementation, and evaluation (A.A.J. Smits, personal communication, November 23, 2017).

This chapter has provided a theoretical background of the two key concepts of this research: professional accountability and business models. The chapter showed what already has been argued about a professional, professional work, the definitions, the parties, the forms, the characteristics, the advantages, the disadvantages and the conditions of professional accountability. In addition, the chapter presented what the current literature on business models discussed about the definitions of a business model, its general characteristics, the types and the specific characteristics. The existing literature on both professional accountability and business models has presented all these elements separately. This chapter has combined many authors of various sources and dates to provide an overview of what already has been said about professional accountability and business models. In addition, diverse tables are added to provide a simplistic overview of the literature. See chapter 5 for all contributions of this research. The next chapter reflects upon the literature on professional accountability and business models as presented in this chapter.

### 3. Theoretical reflection

The previous chapter provided a theoretical background of professional accountability and business models. The way this theory is reflected upon is described in this chapter. This theoretical reflection mentions the research approach (3.1), the theoretical design and analysis (3.2), the theoretical research ethics (3.3) and the possibilities and limitations of the research approach (3.4).

#### 3.1 Research approach

In general, research could be divided into two types of research methods. The first research method is applied research (Swanborn, 1987; Van Strien, 1986), which aims at providing knowledge for solving practical problems in existing situations by using applied scientific research or applied non-scientific research (Verschuren & Doorewaard, 2010). The second research method is theory-oriented scientific research (Swanborn, 1987; Van Strien, 1986), which gathers information by using (empirical) data or without using (empirical) data. Out of these four research methods, the latter, a theory-oriented scientific research without using (empirical) data, is chosen to investigate the context under which the forms of professional accountability work best. As this research does not use (empirical) data but reflects upon theory, the researcher chooses not to use the term ‘research method’ but ‘research approach’ (C. Groß, personal communication, July 16, 2018).

Theory-oriented scientific research, or fundamental, basic or pure research, implies a focus on acquiring and developing knowledge by shifting the boundaries of our knowledge in order to generate that knowledge (Vennix, 2010). According to Vennix (2010), it is about gaining knowledge for the knowledge itself without the intention to directly use that knowledge in practice. By investigating the context of each form of professional accountability, the researcher assumes that this research broadens the literature on professional accountability (as the context was not earlier investigated) and “adds to the already existing organized body of scientific knowledge” (Kothari, 2004, p.3). Hence, the objective relates to the expansion of knowledge (Easterby-Smith et al., 2012) of professional accountability by business models. Besides, theory-oriented scientific research is used “to understand processes and their outcomes, predominantly in universities as a result of an academic agenda, for which the key consumer is the academic community” (Saunders, Lewis & Thornhill, 2009, p. 588). The topics and objectives can be determined by the researcher and there are flexible time scales (Easterby-Smith et al., 2012; Hedrick, Bickman & Rog, 1993).

### **3.2 Theoretical design and analysis**

This theory-oriented scientific research has the aim to answer the following research question: *“What is the context under which the different forms of professional accountability work best?”*. In order to answer this research question, academic literature is collected, read and reflected upon. The academic literature that is selected for this research is based on the two key concepts that were already discussed in chapter 2: professional accountability and business models.

The theoretical design of this research is set up by professional accountability and business models. Professional accountability is analyzed by seven elements: a professional, professional work, professional accountability, parties, forms, characteristics, advantages, disadvantages and conditions. By addressing the views of a professional and perspectives on professional work, the basic elements of professional accountability can be made explicit. The definition of a professional depends on the type of view one has (normative, ideological or discourse view) just as the definition of professional work (rules and procedures, knowledge and skills and ideal-type characteristics). As will be shown in chapter 4, the views on a professional and perspectives on professional work can relate to the forms of professional accountability. Therefore, the researcher does not choose one view or perspective but addresses the richness of knowledge about a professional and professional work. Besides, the broad definition of professional accountability by Banks (2004) is chosen for this research. The researcher assumes that a broad definition of professional accountability can cover the three forms of professional accountability. This is desirable because the researcher prefers a neutral perspective. By distinguishing professional accountability in forms, characteristics and parties, a richer view on the reality of professional accountability is provided. The three forms (calculative, narrative and conditional accountability) are selected because they can be clearly distinguished in the existing literature on professional accountability among many authors of various sources and dates. In addition, this distinction might be universal because the three forms could include many separate aspects in the current literature. The parties enumerated by Emanuel & Emanuel (1996) are selected because these authors already argue that some parties are relevant for particular forms of professional accountability (see paragraph 2.3). This can make it easier to relate the parties to the forms that are used in this research. Besides, presenting both the advantages and disadvantages leads to a more neutral perspective on each form of professional accountability as both sides are exhibited. Lastly, the conditions are important for professional accountability because, as mentioned earlier, these seem to have similarities with business models.

The context for professional accountability is investigated by using business models. The business models are analyzed by four elements: definitions, general characteristics, types and specific characteristics. The researcher chooses the business models of Christensen because he is a well-known leader in innovation in healthcare. He was the first one who came up with the term “disruptive innovation” and forms the footprints of the future (Dreher & Glasgow, 2010). As Almaazmi (2017) argues: “among the modern day theories of business and management, Christensen’s concept of disruptive innovation is one of the most popular theories among academic circles” (Almaazmi, 2017, p. 65). So, the business models of Christensen et al. (2009) can be seen as a groundbreaking prescription for a redesign in healthcare where multiple and mixed business models are used (Christensen et al., 2009). Besides, the context of healthcare is relevant because it delivers an important value to society (A.A.J. Smits, personal communication, November 23, 2017). By mentioning the general and specific characteristics, an overarching view on business models is formulated. This can create a more neutral and diverse perspective on business models.

The theoretical analysis of this research is set up by comparing the elements of professional accountability to the characteristics of business models. The starting point for the comparison is the form of professional accountability because each form seems to have its own interpretation of the elements. For example, calculative accountability might have market related goals, the narrative accountability has the objective to improve care of the (specific) patient and conditional accountability aims at realizing societal value. Based on the elements, each form is then reflected upon each business model and its characteristics by looking for similarities. For example, the market related goals of calculative accountability are compared to the primary process of the VAP, FN and SS. As a result, strong, weak or no links between professional accountability and business models appear (see chapter 4). The link is based on the interpretation of the researcher. The researcher prefers to make direct links (one aspect is literally mentioned in professional accountability and business models) instead of indirect links (one aspect is not literally mentioned in professional accountability and business models) as it might show the clearest overlap. Table 5 shows the theoretical analysis. As earlier mentioned but for clarifying Table 5: the elements of calculative, narrative and conditional accountability refer to the view on a professional, the perspective of professional work, parties, characteristics, advantages, disadvantages and conditions. The characteristics of the VAP, FN and SS relate to the primary process, level of interdependence, type of coordination, value proposition, profit formula, processes and resources.

<b>Calculative accountability</b> + elements	<b>Narrative accountability</b> + elements	<b>Conditional accountability</b> + elements	
<b>VAP</b> + characteristics	<b>VAP</b> + characteristics	<b>VAP</b> + characteristics	
<b>FN</b> + characteristics	<b>FN</b> + characteristics	<b>FN</b> + characteristics	
<b>SS</b> + characteristics	<b>SS</b> + characteristics	<b>SS</b> + characteristics	

*Table 5: The theoretical analysis.*

### **3.3 Theoretical research ethics**

Theory-oriented scientific research deals with various ethical issues. First, proper referencing can be relevant (K. Lauche, personal communication, March 20, 2018). The researcher endeavors this by continuously being aware of the original authors when using literature and use own words. Second, being conscious of the date and which literature is chosen is important (K. Lauche, personal communication, March 20, 2018). The researcher aims at selecting literature that directly adds value to the topic. For example, paragraph 2.3 only mentions the parties for professional accountability without addressing the theory of the authors. Besides, the researcher choses data based on relevant authors, like Christensen and timeliness of sources is realized as much as possible. However, older data is used when it is progressive or relevant. Third, the researcher has to be aware of her role in the research process as interpretation is used. Being attentive of her role and choosing data can be one step towards more acting ethical. For example, analyzing both the advantages and disadvantages of professional accountability discourages a preference of one form. This can contribute to honesty, truthfulness, and integrity (Academy of Management, n.d.).

### **3.4 Possibilities and limitations of the research approach**

Theory-oriented scientific research can have various possibilities. First, the topics and objectives can be fully determined by the researcher because, as a second possibility, theory-oriented scientific research seems to be flexible and might have no strict time scales ((Easterby-Smith et al., 2012; Hedrick et al., 1993). No organizations and participants are involved; it only depends on the researcher. The topics in this research refer to professional accountability and business models.

The objectives in theory-oriented scientific research can refer to the generation of new knowledge to existing literature or advances the current literature by using a new perspective (Vennix, 2010; Verschuren & Doorewaard, 2010). The research expands the knowledge (Easterby-Smith et al., 2012) of professional accountability by business models in order to investigate the suitable context. In addition, the research might generate another perspective to both the literature on professional accountability and business models, which can lead to a reciprocal replenishment. For example, adding business models to the literature on professional accountability creates a macro perspective to professional accountability in an organization. The other way around might also be relevant. Adding professional accountability to business models applies a micro perspective on the current debate about the redesign of healthcare where multiple and mixed business models are used. Third, theory-oriented scientific research leads to universal principles and is applicable in a broad area of disciplines, according to Easterby-Smith et al. (2012). For instance, even though the business models of Christensen et al. (2009) have a specific focus on healthcare, business models and professional accountability seem to be general concepts and hence could be used in other disciplines, like consultancy. Fourth, the researcher assumes that theory-oriented scientific research enhances the value of applied research due to a more grounded theoretical basis.

However, theory-oriented scientific research could also have some limitations. First, this type of research might not have the direct intention to use the knowledge in practice (Vennix, 2010) with the consequence of little practical or commercial value (Hitt & Geer, 2012). However, the researcher aims at creating practical value by using various examples in healthcare, linking business models of organizations to professional accountability and showing overviews where existing literature is summarized. This pre-work can make applying the context for professional accountability much easier. Second, it might be that theory-oriented scientific research does not solve concrete problems for organizations. Though, providing the link between professional accountability and business models adds a new perspective to the current debate about redesigning general hospitals and general practitioners. Third, the context of theory-oriented scientific research might be too broad (Verschuren & Doorewaard, 2010). Nevertheless, this research is demarcated by two concepts (professional accountability and business models) and one sector (healthcare).

This chapter showed the research approach, the theoretical design and analysis, the theoretical research ethics and the possibilities and limitations of the research approach. The next chapter applies the theoretical analysis by linking professional accountability to business models.

## 4. Theoretical analysis

The previous chapter has provided a theoretical reflection on the literature on professional accountability and business models. In particular, it presented the theoretical analysis in order to answer the research question: “*What is the context under which the different forms of professional accountability work best?*”. It became clear that, to investigate the suitable context, the elements of professional accountability are compared to the characteristics of business models. The starting point of this comparison is each form of professional accountability and its elements are used to reflect upon each business model and its characteristics. This chapter applies this theoretical analysis by first addressing the calculative accountability (4.1), then the narrative accountability (4.2) and lastly the conditional accountability (4.3). Only the elements of each form of professional accountability that either seem to have the strongest links or no links at all with the business models of Christensen et al. (2009) are mentioned in this chapter.

The three business models and their characteristics are compared to the three forms of professional accountability. Therefore, Table 6 presents the three business models and its characteristics at forehand in order to refer more easily to this concept during the comparison.

		Business models		
		VAP	FN	SS
Characteristics	Primary process	Long linked technology	Mediating technology	Intensive technology
	Interdependence	Sequential interdependence	Pooled interdependence	Reciprocal interdependence
	Coordination	Planning	Standardization	Mutual adjustment
	Value proposition	Efficient and standardized treatment	Linking clients/experts	Solve unstructured client problems
	Profit formula	Standardization/economies of scale	Network scale/network composition	Expertise
	Processes	- Inbound logistics - Transformation - Outbound logistics	- Network promotion - Service provision - Keep infrastructure up and running	- Diagnose - Design - Implementation - Evaluation
	Resources	Nurses	Network professionals	Experts

Table 6: The three business models and their characteristics.

## 4.1 Calculative accountability linked to business models

As a remedy for untrustworthy actions and scandals, professionals seem to be forced to show accountability in their work by following standards and procedures (O’Neill, 2002; Vriens et al., 2016). Even though this form of professional accountability has some advantages, calculative accountability might be one of the most criticized forms in the existing literature. De-contextualization (Vriens et al., 2016) and alienation (O’Neill, 2002) are examples of this criticism. However, this research shows when calculative accountability really can work by taking into account the suitable context for this form. The research uses the business models of Christensen et al. (2009) to investigate the context for calculative accountability. Table 7 presents the elements of calculative accountability. These elements are reflected upon each business model. This paragraph highlights the elements of calculative accountability with either the strongest links or no links at all with the VAP (4.1.1), FN (4.1.2) and the SS (4.1.3). See Appendix 2 for the total comparison.

		Calculative accountability
<b>Elements</b>	Characteristics	<ul style="list-style-type: none"> <li>- Seems to refer to calculation, facts, evidences and numbers</li> <li>- Might relate to procedures, rules, targets, standards and control</li> </ul>
	Advantages	<ul style="list-style-type: none"> <li>- Could have easy access to some aspects of professional work</li> <li>- Seems to be free of interpretation, faith and belief</li> <li>- Hard data can measure the performance of professionals</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>- Indicators do possibly not do justice to professional work; de-contextualization</li> <li>- Might lead to instrumental behavior, perverse incentives, self-interest, self-orientation and domination</li> <li>- Might lead to alienation</li> <li>- Less communication and interaction possible</li> <li>- Could decrease confidence in competencies and ethics</li> <li>- Less power/dominance possible</li> </ul>
	Conditions	<ul style="list-style-type: none"> <li>- Probably no context-specific situations and less complex institutional settings</li> <li>- Can have individualizing processes and processes with a genuine unit of account</li> <li>- Can have market related goals with the focus on profit maximization</li> <li>- Seems to relate to instrumental or external relations</li> <li>- Should have efficiency and effectivity in use of resources</li> <li>- Could have quantitative, measurable outcomes and performance indicators</li> </ul>

Parties	- Hospitals - Managed care plans - Government
A professional	Could have a normative view on a professional
Professional work	Might relate to rules and procedures for professional work

Table 7: *Calculative accountability and its elements.*

#### 4.1.1 *Calculative accountability linked to the VAP*

Calculative accountability seems to have the most and strongest links with the VAP compared to the FN and SS. The reason for this assertion is that both calculative accountability and the VAP are mainly based standardization, procedures/rules, targets and numbers. This may already indicate that the calculative accountability can work in a VAP. In particular, three elements of calculative accountability seem to relate to almost all characteristics of the VAP. These elements are the characteristics of calculative accountability (Kamuf, 2007; O’Neill, 2002; Vriens et al., 2016) (4.1.1.1), the individualizing processes and processes based on a genuine unit of account (O’Neill, 2013; Roberts, 2001) (4.1.1.2) and efficiency and effectivity in use of resources (Robinson, 2003) (4.1.1.3). However, two elements of calculative accountability are not explicitly mentioned in the VAP and hence might have no link with this business model. These are the parties to be accountable to (Emanuel & Emanuel, 1996; Knutsen & Brower, 2010) (4.1.1.4) and the market related goals with the focus on profit maximization (Freidson, 2001; Roberts, 2001). (4.1.1.5).

##### 4.1.1.1 *The characteristics*

Calculative accountability can be characterized by calculation, facts, objectivity, evidences, numbers, procedures, rules, targets, standards and control (Kamuf, 2007; O’Neill, 2002; Vriens et al., 2016). The researcher asserts that these characteristics relate to almost all characteristics of the VAP, which might show that the VAP could be a relevant context. The VAP uses standardization in its primary process (a standard product is made by the long linked technology), value proposition (efficient and standardized treatment) and profit formula (standardization/economies of scale) (Christensen et al., 2009; Thompson, 2007) (see Table 6). An example of a standard product/standardized treatment in healthcare is a cataract surgery because cataract is a common disease and the operation is straightforward and short in time (Oogfonds, n.d.). The VAP also

follows procedures and rules which can refer to its interdependence (sequential interdependent activities) and processes (inbound logistics, transformation, outbound logistics) (Christensen et al., 2009; Thompson, 2007). For example, the nurse has an intake with the patient, prepares the cataract surgery, anesthetizes the patient, performs the operation, gives care to the patient and finally the patient leaves the room (Radboudumc, n.d.). These activities can be controlled by planning (coordination) to make sure that each activity is fulfilled after the completion of the previous activity (Thompson, 2007). The target/goal of these activities seems to be a standardized and efficient treatment (value proposition). For example, a patient with cataract has a blurry vision but after the surgery, he sees clearly. When the professional realizes a specific number of surgeries, the costs of professionals and the processes in the VAP are covered (profit formula). For example, the costs of a nurse and his processes (intake, preparation, anesthetic, operation and care) might be covered when this nurse yearly realizes 50 cataract surgeries at six locations in the Netherlands.

#### 4.1.1.2 *Individualizing processes and processes based on a genuine unit of account*

Individualizing processes in organizations focus on standards, norms, routines and homogeneity according to Roberts (2001). Processes with a genuine unit of account should refer to the possibility to count in numbers (O'Neill, 2013). The researcher argues that these processes are appropriate for calculative accountability because it has overlapping characteristics: calculation, numbers, procedures and standards (Kamuf, 2007; O'Neill, 2002; Vriens et al., 2016). An example of a standard, routinizing and homogeneity process expressed in numbers is the correction of protruding ears (Catarina Ziekenhuis, n.d.; Radboudumc, n.d.). Every patient passes through the same process of getting an anesthesia, undergoing surgery and receiving care (Catarina Ziekenhuis, n.d.). The researcher argues that individualizing processes (Roberts, 2001) and processes based on a genuine unit of account (O'Neill, 2013) have a strong link with the VAP which again can cautiously indicate that the VAP might be a suitable context for calculative accountability. This is argued because its primary process, interdependence, value proposition, profit formula and processes also seem to focus on standards, norms, numbers and routines (see Table 6), which is already argued in the previous subparagraph. For example, the VAP uses a norm in its primary process (standard rate) and profit formula (magnitude) like five corrections of protruding ears a day. Homogeneity also refer to the primary process and value proposition because the same surgeries (like the correction of protruding ears) are constantly being realized due to standardization as stated by the researcher.

#### *4.1.1.3 Efficiency and effectivity in the use of resources*

The researcher asserts that efficiency and effectivity in the use of resources (Robinson, 2003) are the appropriate skills for calculative accountability because it relates to a target/goal. Calculative accountability is characterized by working to pre-determined targets (Vriens et al., 2016). Efficiency achieves its goal with the least possible use of resources (like time, effort or money). Effectivity fulfills its goal when the resources actually contribute to the realization of the target. Efficiency and effectivity (Robinson, 2003) could have the strongest link with the VAP because the composition of the characteristics creates effectivity and efficiency is realized by standardization. This strong link suggests that the VAP can be a suitable context for calculative accountability. The VAP uses standardization in its primary process, value proposition and profit formula (Christensen et al., 2009). For example, a cataract surgery can last 15 minutes (less time) using simple actions (less effort) by lower educated professionals (low costs) (Oogfonds, n.d.; Radboudumc, n.d.). The VAP can also be effective because the goal is fulfilled by using all characteristics. For instance, six cataract surgeries a day (value proposition/primary process/profit formula) can be realized by a nurse (resources) who plans (coordination) an intake, prepares, gives the anesthesia, operates, gives care and the patient leaves the room (interdependence/processes).

#### *4.1.1.4 Parties*

A professional seems to be calculative accountable for hospitals, managed care plans and the government due to efficiency and regulation (Emanuel & Emanuel, 1996). The government is one of the external parties (Knutsen and Brower, 2010). This is asserted because these parties are congruent with the characteristics and the skills of calculative accountability. This form can also be characterized by regulation and control (O'Neill, 2002) and efficiency is one of the required skills (Robinson, 2003). Even though these parties can be relevant for calculative accountability, the VAP does not explicitly mention these parties, which weakens the VAP as the suitable context. The VAP only appoints the patient by delivering efficient and standardized treatment, like a cataract surgery (Christensen et al., 2009). According to Emanuel & Emanuel (1996), the patient is not described as a party for calculative accountability. Hence, the researcher assumes that there seems to be no link between the parties of calculative accountability and the VAP. However, in practice, the nurses can be accountable to other parties, but it is simply not mentioned. This implies that these parties are not the focus of Christensen et al. (2009) or it could be a 'failure' of them.

#### *4.1.1.5 Market related goals with the focus on profit maximization*

Calculative accountability might work better when organizations have market related goals with a focus on profit maximization (Freidson, 2001; Roberts, 2001). The researcher asserts this because calculation, numbers and targets are relevant for both these goals and calculative accountability. For example, an organization aims at a profit percentage of 30% in 2020. Despite of this cohesion, the researcher argues that these goals are not explicitly described in the VAP which might weaken this business model as a suitable context. The VAP only mentions a profit formula: standardization/economies of scale (Christensen et al., 2009). This defines a price or volume to cover the costs, like fifty cataract surgeries a year. However, this does not seem related to a profit percentage. The researcher asserts that one possible reason could be that the VAP refers to the healthcare sector, which might not directly have the aim to maximize profit. The researcher assumes that these goals are not explicitly described in the VAP which create no clear link. It could not be the focus of Christensen et al. (2009) or a 'failure' of these authors.

In summary, the researcher asserts that the VAP can be a suitable context for calculative accountability. This implies that the calculative accountability really can work in this context. In addition, due to many and strong links, the advantages but also the disadvantages of this form can relate to the VAP. Besides, the criticisms on calculative accountability might not be reasoned from the VAP due to much overlap. In contrast, those who argue for the advantages of the calculative accountability might stimulate the use of a VAP. See chapter 5 for a reflection.

#### *4.1.2 Calculative accountability linked to the FN*

Calculative accountability seems to have strong links with the FN because both relate to standardization, targets and numbers. This can imply that the FN might be a suitable context for calculative accountability. There are three elements of calculative accountability that show the strongest links with the FN. These elements are the characteristics of calculative accountability (Kamuf, 2007; O'Neill, 2002; Vriens et al., 2016) (4.1.2.1), the individualizing processes and processes based on a genuine unit of account (O'Neill, 2013; Roberts, 2001) (4.1.2.2) and efficiency and effectivity in use of resources (Robinson, 2003) (4.1.2.3). In contrast, the parties of calculative accountability (Emanuel & Emanuel, 1996; Knutsen & Brower, 2010) (4.1.2.4) and the market related goals with a focus on profit maximization (Freidson, 2001; Roberts, 2001) (4.1.2.5) are not explicitly mentioned in the FN, which implies that these elements have no link with the FN.

#### *4.1.2.1 The characteristics*

Calculative accountability seems to be characterized by calculation, facts, objectivity, evidences, numbers, procedures, rules, targets, standards and control (Kamuf, 2007; O'Neill, 2002; Vriens et al., 2016). The researcher argues that the FN has overlap with almost all these characteristics. This implies that the FN can be a relevant context. The FN uses standardization in its primary process (the mediating technology applies standardized ways) and in its coordination (standardization) to link patients (target) (value proposition) (Thompson, 2007; Christensen et al., 2009). An example of a FN is the community PatientsLikeMe (Christensen et al., 2009). Patients with the same chronic disease join this community to teach each other how to deal with this disease (Christensen et al., 2009; PatientsLikeMe, n.d.). When more patients become member, standardization and control by categorization per disease is needed to keep overview of the network (Christensen et al., 2009). For example, patients with HIV join PatientsLikeMe and patients with rare diseases become member of CarePlace (Careplace, n.d.; Christensen et al., 2009; PatientsLikeMe, n.d.). The growth of communities is stimulated by procedures/rules, whereby network professionals promote the network, provide service and keep the infrastructure up and running (processes) and every patient contributes to the whole (interdependence). To cover the costs, network scale and network composition are used (profit formula), that is based on calculation and expressed in numbers. For example, the costs are covered when CarePlace has 5.000 members in 2019.

#### *4.1.2.2 Individualizing processes and processes based on a genuine unit of account*

As earlier described, individualizing processes (Roberts, 2001) and processes based on a genuine unit of account in organizations (O'Neill, 2013) should focus on standards, norms, routines, homogeneity and numbers and are appropriate for calculative accountability due to similar characteristics. The researcher asserts that both processes have a strong link with the FN because its primary process, coordination, processes and profit formula also use standards, homogeneity, routines, norms and numbers. These characteristics are already stated by the researcher in the previous subparagraph. For example, the FN uses standardization in its coordination by categorizing the patients per chronic disease (Christensen et al., 2009; Thompson, 2007). Patients with the same disease join the same network (homogeneity). For example, PatientsLikeMe is for HIV-patients and CarePlace for patients with rare diseases (Careplace, n.d.; Christensen et al., 2009; PatientsLikeMe, n.d.) This indicates that the FN can be a suitable context for this form.

#### *4.1.2.3 Efficiency and effectivity in the use of resources*

Efficiency and effectivity in the use of resources (Robinson, 2003) can be the appropriate skills for calculative accountability because both focus on realizing a target. Effectivity and efficiency in the use of resources (Robinson, 2003) seem to have a strong link with all the characteristics of the FN. This can indicate that this business model could be a suitable context for calculative accountability. Efficiency is realized by standardization in its primary process and coordination. Therefore, outcomes can be fulfilled with less effort. For example, patients with the same chronic disease are categorized into one community. This standardization seems to be needed to provide an overview of the growing number of patients who join the communities. It refers to a network scale and network composition of patients where the outcome with low costs can be realized. Besides, the FN could be effective because the goal can only be fulfilled when all other characteristics are used. For example, network professionals (resources), promote the network, provide service and keep the infrastructure up and running (processes) to link patients with HIV (value proposition). Every patient can contribute to the community (interdependence) and when the community grows (profit formula), the patients are categorized per disease (primary process) and their replenishment is coordinated by network professionals (Christensen et al., 2009; Thompson, 2007).

#### *4.1.2.4 Parties*

Subparagraph 4.1.1.4 already mentioned that hospitals, managed care plans and the government might be relevant parties for a professional who shows calculative accountability (Emanuel & Emanuel, 1996). This is asserted due to the overlap with the characteristics and skills of this form of professional accountability. Even though these parties can be important for calculative accountability, the FN does not clearly appoint these parties. This weakens the FN as the suitable context. The FN only mentions that value is delivered by linking patients with the same chronic disease (value proposition). For example, a 60-year old patient with HIV advises a 40-year old patient how to deal with this chronic disease. However, the patient seems not mentioned as a party for calculative accountability. So, like the VAP, the FN might not have a link with the parties. Even though the hospitals, managed care plans and the government are not explicitly appointed in theory and there seems no link with the FN, the network professionals could be accountable to these parties in practice. This implies that these parties are maybe not the focus of Christensen et al. (2009). The researcher assumes that not appointing these parties could also imply a 'failure' of these authors.

#### *4.1.2.5 Market related goals with a focus on profit maximization*

Market related goals with a focus on profit maximization (Freidson, 2001; Roberts, 2001) can be the goals for calculative accountability. The researcher asserts this because both the calculative accountability and the goals are focused on calculation, numbers and targets. Despite of this coherence, the researcher argues that the goals are not explicitly mentioned in the FN which might have no link with this business model. This weakens the FN as a suitable context. One possible argument can be that the FN relates to the healthcare sector, which seems not explicitly aimed at maximizing profit. The FN only refers to the profit formula (network scale and network composition) to cover the costs. However, this is not aimed at a profit percentage, like a market share of 40%. Maybe it is not the focus of Christensen et al. (2009) or a 'failure' of these authors.

Based on the above reflection, the researcher asserts that the FN can be a suitable context for the calculative accountability. The same elements of calculative accountability that relate to the FN also have the strongest link or no link with the VAP. However, the researcher argues that the VAP has more overlap which implies that this business model can work better for calculative accountability. Nevertheless, it again shows that the calculative accountability can work. Besides, due to strong links, the advantages and disadvantages of calculative accountability might also apply to the FN. In addition, the many disadvantages and criticism on calculative accountability seems not originate from the FN due to strong links. The authors who mention the advantages of calculative accountability might stimulate the use of the FN. Chapter 5 discusses this in more detail.

#### *4.1.3 Calculative accountability linked to the SS*

Calculative accountability seems to have the least and weakest links with the SS compared to the VAP and FN. This finding can indicate that the SS is not a suitable context. The reason for this assertion is that standardization, procedures/rules and numbers, which forms mainly the bases of calculative accountability, cannot be applied to the SS and is sometimes even the opposite. These contractions are the most obvious elements that show that there might be no link with the SS. These elements are the disadvantage of de-contextualization (Vriens et al., 2016), less complex institutional settings (O'Neill, 2014) and no context-specific situations (Vriens et al., 2016) (4.1.3.1). The second contractionary element is the possible advantage of free of interpretation, faith and belief (Kamuf, 2007) (4.1.3.2). The only link between calculative accountability and the SS might be the efficiency and effectivity in the use of resources (Robinson, 2003) (4.1.3.3).

#### *4.1.3.1 De-contextualization, less complex institutional settings, no context-specific situations*

According to Vriens et al. (2016), calculative accountability does not allow professionals to respond to specific situations: the performance remains abstract and does not reckon with the context, which leads to de-contextualization. Therefore, the researcher assumes that the appropriate context for calculative accountability refers to less complex institutional settings (O'Neill, 2014) and no context-specific situations. The researcher argues that this context indicates general and quite straightforward circumstances; it describes 'simpler' settings and universal situations. To perform in this context, standardization can be used. Standards are also described as one of the characteristics of calculative accountability. The researcher argues that standardization might not be applied in the SS, because each situation is unique; it depends on the feedback from the patient and the availability of skills of the expert (Thompson, 2007). Besides, the relationship between causes, disorder and treatment is not known which makes it hard to standardize the processes. For example, two patients can have the same disorder (depression), but different causes (loss of a partner or a low self-esteem) and treatments (antidepressants or visit the psychologist) (Depressievereniging, n.d.; GGZ Group, n.d.). Therefore, the SS seems to operate in the opposite context: complex institutional settings and context-specific situations. This finding might indicate that there might be no link and the calculative accountability cannot be fully appreciated in a SS.

#### *4.1.3.2 Free of interpretation, faith and belief*

Calculative accountability is said to be free of interpretation, faith and belief (Kamuf, 2007) because this form is characterized by numbers. Numbers "do not narrate, interpret, and they make no claim on faith or belief" (Kamuf, 2007, p. 252). For example, a dentist who must demonstrate once a year that he is able to give a heart rhythm massage to patients, does not have to show that he believes in it, he mainly has to demonstrate that he is able to execute the steps (Van Steenberg, 2017). However, interpretation, faith and belief are, according to the researcher, very important and necessary for the communication between the expert and the patient in the SS. The expert needs to interpret the feedback from the patient correctly and the patient must have the faith and belief that the expert is able to come up with a solution for his disorder, like a depression. Therefore, both the expert and the patient are reciprocal dependent to each other and need mutual adjustment for solving the unstructured disorder of the patient (Thompson, 2007). This again might imply no link with the SS and indicate that the SS cannot be the suitable context for calculative accountability.

#### *4.1.3.3 Efficiency and effectivity in the use of resources*

Efficiency and effectivity in the use of resources (Robinson, 2003) seem to be the relevant skills for calculative accountability and relate to each other due to their focus on a target. The researcher asserts that efficiency and effectivity in the use of resources (Robinson, 2003) might be the only strong but partial link to the SS. This suggests that the SS is a doubtful context. The SS could be partial linked to these skills because the SS is effective but not efficient. The researcher asserts that efficiency cannot be realized because the outcome cannot be fulfilled in a short time with less effort and money. A time-consuming process (much time) of diagnosing, designing, implementing and evaluating is needed to solve the disease (much effort). Highly educated experts use their expertise and interact with the patient (high costs) (Christensen et al., 2009; Thompson, 2007). For example, the general practitioner figures out that a patient who suffers from headaches due to personal issues could have a depression. Antidepressants are prescribed, but this does not work and the patient is advised to visit the psychologist. Besides, the SS might be effective because every characteristic is used to realize its goal. For example, to treat the depression of the patient (value proposition), the expert (resource) needs to use the skills (primary process/interdependence/coordination/profit formula) by diagnosing, designing, implementing and evaluating (processes).

To summarize, the researcher claims that the SS seems not a suitable context for calculative accountability. This business model clearly shows a context where calculative accountability cannot work due to the least and weakest links. The researcher asserts that the disadvantages and the authors that criticize this form of professional accountability can be reasoned from the SS. However, the calculative accountability really can work in the context of a VAP and the FN and authors that argue for the advantages of this form of professional accountability might stimulate the use of a VAP, FN and related context in order to fully appreciate the calculative accountability. Chapter 5 will extensively discuss and reflect on these results.

## **4.2 Narrative accountability linked to business models**

As calculative accountability has been much criticized by various authors (for an overview, see Vriens et al., 2016), there seems to be a need for alternative forms of professional accountability. One of the alternatives is the narrative accountability. The literature among various authors from different sources and dates seems to discuss the advantages and disadvantages of narrative accountability, which indicates both proponents and opponents of this form. This research presents

the literature together and to shows a suitable context where narrative accountability really can work. Therefore, the business models of Christensen et al. (2009) are used. Table 8 presents an overview of the elements of narrative accountability. These elements are compared to each business model. This paragraph describes only the elements of narrative accountability that might either have the strongest links or no links at all with the VAP (4.2.1), FN (4.2.2) and SS (4.2.3). See Appendix 3 for the total comparison between narrative accountability and the business models.

		Narrative accountability
<b>Elements</b>	Characteristics	<ul style="list-style-type: none"> <li>- Narration could be possible</li> <li>- Might be able to explain and discuss reasons for conduct</li> <li>- Creates communicative freedom</li> <li>- Seems to be subjective</li> </ul>
	Advantages	<ul style="list-style-type: none"> <li>- Possibility to communicate</li> <li>- Opportunity to professional discretionary judgement</li> <li>- Might include the context</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>- Could not suffice in creating confidence to a wider public</li> <li>- Could be difficult to convey information about professional work to non-professionals</li> </ul>
	Conditions	<ul style="list-style-type: none"> <li>- Can apply in context-specific situations</li> <li>- Seems to be relevant for socializing processes</li> <li>- Could improve care of the (specific) patient</li> <li>- Might have interdependence relations</li> <li>- Can focus on moral imagination, practice of empathic presence and mindful listening, read and interpret complex texts, write reflectively and tell complex clinical stories, reason with stories and engage in narrative ethics</li> <li>- Might refer to qualitative outcomes</li> </ul>
	Parties	<ul style="list-style-type: none"> <li>- Professional colleagues</li> <li>- Professional organization</li> <li>- Professional associations</li> <li>- Patient</li> </ul>
	A professional	Could have a discourse view on a professional
	Professional work	Can relate to knowledge and skills for professional work

Table 8: Narrative accountability and its elements.

#### *4.2.1 Narrative accountability linked to the VAP*

The narrative accountability seems to have the least and weakest links with the VAP compared to the FN and the SS. The researcher asserts this because the main aspects of narrative accountability, narration, communication, discussion, interaction, subjectivity and complexity might not be used in the VAP and can even be opposing to this business model. This indicates that the VAP might not be the suitable context for this form. Including the context (Vriens et al., 2016) and context-specific situations are the elements that contradict the VAP (4.2.1.1) and might have no link. The VAP also seems not to be linked to the skills (Charon, 2006) (4.2.1.2). The only small link with the VAP might be the parties of narrative accountability (Emanuel & Emanuel, 1996) (4.2.1.3).

##### *4.2.1.1 Including the context and context-specific situations*

Narrative accountability might include the context (Vriens et al., 2016) and can apply to context-specific situations. For example, a general practitioner tells to patient A to treat his depression with antidepressants, because he has lost his partner and earlier psychotherapy did not work (Depressievereniging, n.d.; Thuisarts.nl, n.d.). Patient B is advised to treat his depression with a short-term treatment, because he lost his partner two weeks ago (Depressievereniging, n.d.). Dependent on the context of the patient, the general practitioner mentions different causes and treatments. Including the context seems to relate to narrative accountability because this form might not be restricted to rules and procedures and hence create more freedom to act in specific situations. Even though narrative accountability can relate to these kind of contexts, the VAP seems to have no link with specific situations as it might not include the context. The researcher argues that this suggests that the VAP could not be a suitable context for narrative accountability. The VAP indicates a focus on standardized, repetitive and homogeneous situations because this business model uses standards in its primary process, value proposition and profit formula (Christensen et al., 2009, Thompson, 2007). Rules and procedures in its processes and interdependence are applied to realize these standards. For example, each situation for a cataract surgery could be the same: a patient sees blurred, has cataract and gets the surgery after he had an intake (Radboudumc, n.d.).

##### *4.2.1.2 Skills*

Narrative accountability can be accomplished when a professional shows the appropriate skills. These skills might refer to “moral imagination, empathic presence and mindful listening, read,

interpret, reflect and tell complex texts and stories, reason with stories and engage in narrative ethics” (Charon, 2006 as cited in Peterkin, 2011, p. 396). The researcher argues that these skills relate to narrative accountability. The narrative accountability has similar characteristics (narration, discussion (Kamuf, 2007; Vriens et al., 2016)), a related advantage (possibility to communicate (O’Neill, 2002; Vriens et al., 2016)) and overlapping processes (communicate, interact (Roberts, 2001)). Despite of the cohesion, the researcher argues that there seems to be no link between the skills for narrative accountability and the VAP. This is asserted because these skills are not appropriate for delivering efficient and standardized treatment (value proposition). The focus is probably not directly on moral imagination but the professional mainly should be capable for precisely follow the steps. The VAP has fixed rules, standards and procedures whereby the professional seems to have little freedom to deviate from targets. For example, a nurse who has an intake with the patient has to check the personal issues. No complex stories and moral imagination might be needed to understand these issues (Van Steenbergen, 2017). Therefore, this finding again can imply that the VAP seems not the suitable context for narrative accountability.

#### *4.2.1.3 Parties*

A professional seems to be narrative accountable to professional colleagues, organizations, associations and the patient (Emanuel & Emanuel, 1996). According to these authors, physicians who are accountable based on discussion and deliberation (which are also one of the characteristics of narrative accountability in this research) aims at individual patients’ health (Emanuel & Emanuel, 1996). These professionals are also accountable to professional colleagues, organizations and associations (Emanuel & Emanuel, 1996). Despite of this overlap between these parties and narrative accountability, the VAP only mentions that efficient and standardized treatment is delivered to the patient (Christensen et al., 2009). This can indicate that the VAP is a doubtful context for narrative accountability. The role of professional colleagues, organizations and associations are not clearly described in this business model and hence seems to show only a small link with the VAP. However, even though these parties are not mentioned and might indicate no link in theory, it is possible that experts can be accountable to these parties in practice. These parties might not be the focus of Christensen et al. (2009) or it could be a ‘failure’ of these authors.

In summary, the researcher argues that the VAP cannot be the suitable context for narrative accountability, which is an example where this form cannot work. Due to the least and weakest

links, narrative accountability might not flourish in the VAP. This can indicate that the criticism of the authors on narrative accountability and its disadvantages might be reasoned from the VAP. However, as will be shown, the narrative accountability really can work in another context.

#### *4.2.2 Narrative accountability linked to the FN*

The narrative accountability might have the most ‘average’ links with the FN: there are not many very strong or very weak links. The researcher asserts that this suggests that the FN is a doubtful context for narrative accountability: there might be no clear preference for this form. Narrative accountability seems to be based on communication, discussion, interaction and subjectivity. These aspects are important for the FN but this business model can also be ‘constrained’ by its focus on standardization and numbers/network scale (Christensen et al., 2009). This might create less leeway to deviate from these standards. The elements that seem to have the strongest links with the FN are the possibility to communicate (O’Neill, 2002; Vriens et al., 2016) (4.2.2.1) and the socializing processes (Roberts, 2001) (4.2.2.2). The weakest link with the FN seems to be the goal of narrative accountability: improve care of the (specific) patient (Ubels, 2015) (4.2.2.3).

##### *4.2.2.1 Possibility to communicate*

The narrative accountability gives the possibility to communicate (O’Neill, 2002; Vriens et al., 2016) because this form can be characterized by communicative freedom (Vriens et al., 2016). The researcher argues that the FN has a strong link with this advantage because communication seems to be applied in many characteristics of the FN. The FN uses communication between network professionals and patients. This communication might be used in the entire process: before the patients are linked to each other and when the link is made between patients (primary process, value proposition). For example, the network professionals promote the online community PatientsLikeMe to patients with HIV by advocating for the advantages (processes). When the patient is a member, the network professionals can link these patients with other patients (value proposition), inform how the community works, provide service and keep the infrastructure up and running. When the patients are linked, they communicate with each other how to deal with the chronic disease (interdependence) (Christensen et al., 2009). This strong link can be an example where, with caution, the FN might be a suitable context for narrative accountability.

#### *4.2.2.2 Socializing processes*

Socializing processes in organizations could refer to subjectivity, interdependence relations, flow of communication and interaction, reciprocal interests and the opportunity to challenge situations (Roberts, 2001). These processes can relate to the narrative accountability because this form might have overlapping characteristics (subjectivity, communication (Kamuf, 2007; Vriens et al., 2016)) and a similar condition (reciprocal interests (Ubels, 2015)). The researcher claims that socializing processes can link to many characteristics of the FN. As already mentioned, communication is used between network professionals and patients and applied to the whole process. Therefore, communication (and interaction) might be used in the primary process, interdependence, value proposition and processes of the FN (Christensen et al., 2009; Thompson, 2007). The interdependence relations can relate to the interdependence of the FN. For example, a 50-year old patient who has HIV shares his experiences with a 30-year old patient with the same disease. This 30-year old patient reacts and tells the latest technologies he just read in the newspaper. This creates reciprocal interests. Besides, sharing experiences might be subjective because of the expression of personal feelings. Due to a strong link between the socializing processes of narrative accountability and the FN, the researcher can carefully indicate that the FN might be a suitable context.

#### *4.2.2.3 Improve care of the (specific) patient*

The narrative accountability might aim at improving care of the (specific) patient (Ubels, 2015) because the context of the patient is taken into account (Vriens et al., 2016). However, the FN does not have an explicit focus on one patient, but on multiple patients. This is mentioned in its primary process (multiple patients), coordination (standardization), value proposition (linking clients) and profit formula (network scale and composition) (Christensen et al., 2009; Thompson, 2007). The community cannot function for one patient: the FN is 'profitable' when there is a particular network scale and network composition, like 5.000 members. Only then can the value proposition be realized. This weakens the assertion that the FN is a suitable context for narrative accountability.

To summarize, the researcher asserts that the FN seems to be a doubtful context for the narrative accountability because there not very strong links or very weak links. This might not present a clear preference for narrative accountability. Therefore, the researcher can assume that the authors who argue for the advantages and disadvantages of narrative accountability could both stimulate and discourage the use of a FN. Chapter 5 discusses this in more detail.

### *4.2.3 Narrative accountability linked to the SS*

The narrative accountability might have the most and strongest links with the SS in relation to the VAP and FN. The researcher asserts this because the elements of narrative accountability might be based on narration, communication, discussion, interaction, subjectivity and complexity which can be highly used in all characteristics of the SS. In particular, the opportunity to include the context (Vriens et al., 2016) and context-specific situations (4.2.3.1), the possibility to communicate (O'Neill, 2002; Vriens et al., 2016) (4.2.3.2), professional work that relates to knowledge and skills (Banks, 2004) (4.2.3.3) and socializing processes (Roberts, 2001) (4.2.3.4) are elements that might be crucial for the SS and could show the strongest links with the SS. In addition, all links can be noticed. Therefore, the researcher suggests that the SS might be a suitable context for this form.

#### *4.2.3.1 Including the context and context-specific situations*

The narrative accountability seems to include the context (Vriens et al., 2016) and might be appropriate in context-specific situations. This is possible because this form can have the freedom to narrate, communicate and interact dependent on the situation, without being restricted to rules and procedures. Including the context seems to be very necessary for the SS in order to solve the unstructured disease of the patients (value proposition). The researcher asserts this because without the specific feedback from the patient, it is hard to treat his complex disease. Besides the feedback, the skills, like intuition of the expert (profit formula) need to be available (Christensen et al., 2009). Both the feedback from the particular patient and the availability of the required skills of the expert might be crucial (the intensive technology, reciprocal interdependence, mutual adjustment). As well as the feedback as the skills can differ per situation but both are very important for delivering a customized treatment to the patient. This indicates that the SS might be a suitable context for the narrative accountability to be fully appreciated.

#### *4.2.3.2 The possibility to communicate*

The narrative accountability can create the possibility to communicate (O'Neill, 2002; Vriens et al., 2016) because this form is characterized by communicative freedom (Vriens et al., 2016). The possibility to communicate might be crucial for the SS according to the researcher. This is assumed because this business model seems to use communication in its primary process (feedback from the patient), interdependence (reciprocal), coordination (mutual adjustment) and processes

(diagnose, design, implement and evaluate) in order to deliver its value proposition: solve the unstructured disease of the patient (Christensen et al., 2009, Thompson, 2007). For example, the patient tells the general practitioner he suffers from headaches because he has lost his partner. During the conversation, it becomes clear that the patient has parents who had a depression. Therefore, the patient could have hereditary predisposition to depression (Depressievereniging, n.d.; GGZ Groep, n.d.). Instead of prescribing antidepressants, the patient is now advised to visit the psychologist. So, only by communicating, the professional can detect and solve the unstructured problem of the patient. Again, this implies that the SS could be an appropriate context.

#### *4.2.3.3 Professional work focused on knowledge and skills*

One perspective on professional work is the focus on knowledge and skills (Banks, 2004). Knowledge and skills can refer to narrative accountability because it seems to be needed for elements like the characteristics (narration (Kamuf, 2007)) and advantages (communication and the opportunity to professional discretionary judgement (O'Neill, 2002; Vriens et al., 2016)). Professional work focused on knowledge and skills might have a strong link with the SS because particular expertise is needed in order to solve the unstructured disease of the patient (value proposition). This expertise refers to the profit formula of the SS (Christensen et al., 2009). For instance, the psychiatrist needs problem solving skills to treat his patient with a personality disorder. The need for knowledge and skills is important because the relation between cause, disorder and treatment is unknown. Only the highest educated experts are deployed to figure out these kind of diseases while lower educated professionals are less able to solve these unstructured problems. The researcher asserts that this gives an indication that the SS could be a suitable context.

#### *4.2.3.4 Socializing processes*

As already mentioned, socializing processes might refer to subjectivity, interdependence relations, flow of communication and interaction, reciprocal interests and the opportunity to challenge situations as stated by Roberts (2001). These processes can relate to the narrative accountability because it seems to have overlapping characteristics (subjectivity, communication (Kamuf, 2007; Vriens et al., 2016)) and a similar reciprocal perspective according to Ubels (2015). Almost all characteristics of the SS can be congruent with these processes, which creates a strong link between both. This clearly indicates that the SS might be a suitable context for narrative accountability. The

experts in the SS use subjective, soft skills as expertise (profit formula), like intuition, to solve the unstructured problem of the client (Christensen et al., 2009). This might be needed because the relation between cause, disorder and treatment is unknown. For example, obesity can have many causes (bullying, metabolism) and hence various treatments (visit the psychologist, try other diet). Besides, the expert does not operate on his own: reciprocal interdependence to other professionals or patients are important because situations and outcomes are unpredictable. Additionally, the SS uses communication and interaction in its primary process, interdependence, coordination and processes in order to deliver its value proposition: solve the unstructured disease of the patient (Christensen et al., 2009). Lastly, the SS creates the opportunity to challenge situations as this business model might be not restricted to rules, procedures and standards. The SS has the freedom to use a trial-and-error process of diagnosing, designing, implementing and evaluating (processes).

Based on the above reflection, the researcher argues that the SS can be a suitable context for narrative accountability. All links might be noticed, which could show that narrative accountability really can work in this context (or similar contexts). The authors who mention the advantages of the narrative accountability might also speak with much praise about the SS. The researcher also argues that, due to many and strong links, the advantages but also the disadvantages could relate to the SS. In addition, the criticisms on narrative accountability might not be reasoned from SS due to much overlap. Criticism on narrative accountability seems to be argued from the VAP, who can be opponents of narrative accountability. The FN is a doubtful context of narrative accountability, which can result in a mix of authors that stimulate and discourage the use of a FN when professionals perform narrative accountability. See chapter 5 for the discussion.

### **4.3 Conditional accountability linked to business models**

As mentioned, calculative accountability might be one of the most criticized forms in the literature. Therefore, there seems to be a need for alternative forms of professional accountability. One of these forms is narrative accountability, which is discussed previously. A second alternative form is conditional accountability. This form is developed after calculative and narrative accountability and is a response to both forms and their related “dilemma of professional accountability” (Vriens et al., 2016) (see paragraph 2.4). The conditional accountability is under conceptual level, but the authors of this form already mention some advantages and disadvantages. In order to fully appreciate the advantages and to contribute to the development of this conceptual form, this

research takes into account the context by using the business models of Christensen et al. (2009). Table 9 presents an overview of the elements of conditional accountability. These elements are reflected upon the three business models. This paragraph describes only the elements that seems to have either the strongest links or no links at all with the VAP (4.3.1), FN (4.3.2) and SS (4.3.3). See Appendix 4 for the total comparison between conditional accountability and business models.

		Conditional accountability
<b>Elements</b>	Characteristics	<ul style="list-style-type: none"> <li>- Might reckon for the conditions for conduct</li> <li>- Can take into account the goals</li> <li>- Seems to allow for the infrastructure</li> </ul>
	Advantages	<ul style="list-style-type: none"> <li>- Could have easy access to information about the conditions for conduct</li> <li>- Could fit the criteria of intelligent accountability of O’Neill (2002)</li> <li>- Might include the context</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>- Could need monitoring for controlling professional conduct</li> <li>- Might be doubtful if needed when clear calculative measurements are formed</li> <li>- Seems to have unclear measurements</li> <li>- Can have no control from outside, become expensive and leaves out financial necessities</li> </ul>
	Conditions	<ul style="list-style-type: none"> <li>- Seems to allow for context-specific situations</li> <li>- Might have processes based on listening, asking questions and talking</li> <li>- Could have intensive technology</li> <li>- Can refer to the realization of societal value</li> <li>- Seems to have interdependence relations</li> <li>- Should have specific knowledge and skills through an extensive period of study and practice</li> <li>- Can refer to qualitative outcomes and quantitative outcomes</li> </ul>
	Parties	<ul style="list-style-type: none"> <li>- Hospitals</li> <li>- Managed care plans</li> <li>- Government</li> <li>- Patient</li> </ul>
	A professional	Could have a discourse view on a professional
	Professional work	Might relate to ideal-type characteristics for professional work

Table 9: Conditional accountability and its elements.

### *4.3.1 Conditional accountability linked to the VAP*

Conditional accountability could have some links with the VAP but most might be weak. This implies that the VAP is not a suitable context for this form. The researcher asserts this because conditional accountability might not focus on standards, procedures and numbers but on conditions, goals and conduct. Conditional accountability also has overlap with the narrative accountability, which have the weakest links with the VAP. The element of conditional accountability that might contradict the VAP is the disadvantage of unclear measurements (C. Groß, personal communication, March 21, 2018) (4.3.1.1). Besides, there seems no link with including the context (Vriens et al., 2016) and context-specific situations (4.3.1.2). The researcher argues that the VAP only links to the characteristics of conditional accountability (Vriens et al., 2016) (4.3.1.3).

#### *4.3.1.1 Unclear measurements*

A disadvantage of conditional accountability seems to be that it is unclear how to measure the conditional accountability of the organization. Professionals in an organization might always criticize their conditions (time, tools, information) (C. Groß, personal communication, March 21, 2018). For example, the surgeon complains that there are no operation tables available for the patient who needs to be operated on his heart very urgently. It could be unclear how to measure the conditional accountability of the hospital because this organization fails to provide the tools (operation tables) on time, which hinders the work of the surgeon. Even though unclear measurements seem to relate to conditional accountability, the researcher argues that unclear measurements might have no link with the VAP. This business model has clear measurements due to its focus on standards, procedures and numbers. The standards seem to refer to the primary process, value proposition and profit formula (Christensen et al., 2009; Thompson, 2007). Procedures and routines relate to the level of interdependence, coordination and processes (Christensen et al., 2009; Thompson, 2007). Each activity is strictly planned and prepared to overcome unforeseen circumstances (like no operating tables). These rules and procedures might indicate clear measurements: the professional has to precisely follow those sequential steps to fulfill his task correctly. Clear measurements are also applied to the numbers in its profit formula. For example, the nurse needs to fulfill six 15-minute cataract surgeries. As there seems no link between unclear measurements and the VAP, the researcher indicates, with caution, that this business model might not be the appropriate context for conditional accountability.

#### *4.3.1.2 Including the context and context-specific situations*

The conditional accountability takes into account the conditions of a situation (Vriens et al., 2016). Therefore, conditional accountability seems to be applicable for context-specific situations. Despite of the relation between the context and conditional accountability, the researcher argues that including the context and context-specific situations seems to have no link with the VAP. This business model might operate best under the same repetitive situations by using standards, rules and procedures. As already discussed earlier, the VAP uses standards in its primary process, value proposition and profit formula and rules and procedures in its interdependence, coordination and processes to fulfill these standards (Christensen et al., 2009; Thompson, 2007). For example, every patient who has protruding ears follows the same process of getting an anesthesia, undergoing surgery and receiving care (Catarina Ziekenhuis, n.d.). As the VAP seems to have no link with including the context and context-specific situations, the researcher implies that this business model is not directly relevant for the conditional accountability and cannot benefit from the VAP.

#### *4.3.1.3 Characteristics*

Conditional accountability might be characterized by the conditions for conduct, goals and the infrastructure according to Vriens et al. (2016). It seems to reckon with the conditions of the situation, the goals and the infrastructural arrangements (Vriens et al., 2016). These characteristics can be linked to the VAP, because the composition of characteristics describes how this business model realizes its goal by which kind of infrastructure. The goals can relate to the value proposition of the conditional accountability (efficient and standardized treatment (Christensen et al., 2009)) as both describe a particular outcome. The infrastructural arrangements can refer to the primary process, interdependence, coordination, processes and profit formula because each characteristic describes how the work of the professional is structured (Christensen et al., 2009; Thompson, 2007). For example, a nurse treats six patients with cataract a day by planned standard sequence of activities. This indicates that the VAP seems to be a suitable context for conditional accountability.

In summary, the researcher argues that the VAP is not explicitly the appropriate context for conditional accountability because there are some links but most are weak. This might not present a clear preference for conditional accountability. As a consequence, the researcher argues that most criticism on conditional accountability seems to be reasoned from the VAP. This criticism can relate to the authors who mention its disadvantages. Chapter 5 discusses this in more depth.

### *4.3.2 Conditional accountability linked to the FN*

The conditional accountability has as many weak as strong links with the FN, which indicates a doubtful context. The researcher argues that the conditional accountability is broad, which seems to create some links with the characteristics of the FN. However, the conditional accountability also has similarities with the narrative accountability which might have weak links with the FN. The strongest link with the FN seems to be the characteristics of conditional accountability (Vriens et al., 2016) (4.3.2.1). The processes (Roberts, 2009) (4.3.2.2) can also link to the FN. However, the intensive technology (Thompson, 2007) (4.3.2.4) might not link to the FN.

#### *4.3.2.1 Characteristics*

Conditional accountability is characterized by the conditions for conduct, goals and infrastructure (Vriens et al., 2016). These characteristics can be linked to the FN because, like the VAP, the composition of characteristics indicates how the FN realizes its goal by which type of infrastructure. This shows that the FN might be a suitable context for conditional accountability. The goals can refer to the value proposition of the FN: linking patients with the same disease to each other (Christensen et al., 2009). Besides, the infrastructural arrangements might link to the primary process, interdependence, coordination, processes, and profit formula (Christensen et al., 2009; Thompson, 2007). These characteristics describe how the work of the network professional is structured. For instance, the network professional can promote the community PatientsLikeMe to potential members with HIV in order to link them with other patients (Christensen et al., 2009).

#### *4.3.2.2 Processes based on listening, asking and talking*

The conditional accountability can be applied in organizations with processes based on listening, asking questions and talking (Roberts, 2009). This is argued because conditional accountability creates the conditions for professionals to govern their own tasks without much control (intelligent accountability) (O'Neill, 2002). These processes can strongly relate to the primary process, interdependence, value proposition and processes of the FN (Christensen et al., 2009; Thompson, 2007). These processes can be used when network professionals promote CarePlace to potential members by talking and listening to their needs (processes). Listening, asking and talking is also used when professionals link patients (primary process and value proposition) and when patients contribute to the network (interdependence). Therefore, the FN could be a suitable context.

#### *4.3.2.3 Intensive technology*

The intensive technology seems to be one of the conditions for conditional accountability and also one of the ideal-type characteristics of professional work (Vriens et al., 2016). According to Thompson (2007), the intensive technology is a primary process that is fulfilled when both the feedback from the patient and the capacities of the expert are available. Despite of this coherence, the researcher argues that the FN possibly does not link with this type of technology. This weakens the finding that the FN is a suitable context. Christensen et al. (2009) argue that the FN uses the mediating technology as its primary process to link patients with the same chronic disease to each other (Christensen et al., 2009; Thompson, 2007). The intensive technology is applied by the SS in order to solve the unstructured disease of the patient (Christensen et al., 2009; Thompson, 2007).

To summarize, the researcher argues that the FN is a doubtful context for conditional accountability because there are ‘average’ links between both. This seems to present not a clear preference for conditional accountability. Therefore, the researcher can assume that there is a mix of authors that argues for the advantages and disadvantages of conditional accountability who both can stimulate and discourage the use of FN in organizations. Chapter 5 discusses this in more depth.

#### *4.3.3 Conditional accountability linked to the SS*

There seems to be many strong links and some weak or no links between conditional accountability and the SS. The researcher asserts this because the conditional accountability has general aspects (conditions, goals and conduct) which can create links. Besides, the conditional accountability has similarities with the narrative accountability that seems to have the most and strongest links with the SS. The finding that the conditional accountability might have many strong links can already cautiously indicate that the SS might be a suitable context for the conditional accountability. The researcher argues that there seems to be three elements that have the strongest link with the SS. These are the characteristics of conditional accountability (Vriens et al., 2016) (4.3.3.1), the possibility to include the context (Vriens et al., 2016) and context-specific situations (4.3.3.2) and the view on professional work (Vriens et al., 2016) (4.3.3.3). However, there might be no link with the disadvantage of conditional accountability that contents that this form is doubtful when calculative measurements are formed (Vriens et al., 2016) (4.3.3.4).

#### *4.3.3.1 The characteristics*

Conditional accountability seems to be characterized by the conditions for conduct which refer to the goals and the infrastructural arrangements (Vriens et al., 2016). The goals and infrastructural arrangements can be related to the SS because, like the VAP and FN, the composition of its characteristics show how the SS uses a particular infrastructure in order to fulfill the goal. The researcher argues that this might carefully imply that the SS could be a suitable context for the conditional accountability in order to be appreciated. The infrastructural arrangements can be linked to the primary process, interdependence, coordination, processes and profit formula of the SS (Christensen et al., 2009; Thompson, 2007). Each of the characteristics describes how the work of the expert is structured. For example, the general practitioner uses his analytical skills (profit formula) and receives input from the patient (primary process/interdependence) to solve the patients' depression (value proposition). This can relate to the particular goal or the value proposition of the SS: solve unstructured problems of the patient (Christensen et al., 2009).

#### *4.3.3.2 Including the context and context-specific situations*

The conditional accountability takes into account the conditions of the situation and hence includes the context according to Vriens et al. (2016). Including the context can be strongly linked to the SS because this business model deals with unique situations: both the feedback from the patient and the availability of skills of the expert might be needed (intensive technology, reciprocal interdependent, mutual adjustment, experts) in order to solve the unstructured problems of the patient (value proposition) (Christensen et al., 2009; Thompson, 2007). Again, the researcher can imply that the SS seems to be a suitable context for conditional accountability.

#### *4.3.3.3 Professional work focused on the three ideal-type characteristics*

Professional work can relate to the application and development of specific knowledge and skills, intensive technology and the dedication to a particular societal value (Vriens et al., 2016). These ideal-type characteristics are realized when accounting for the conditions for professional work. These three ideal-type characteristics seem to have a strong link with the characteristics of the SS according to the researcher. First, Vriens et al. (2016) argue that professional work requires highly specific knowledge and skills through an extensive period of study and practice. This can relate to the profit formula of the SS: expertise. Only experts with the required skills might be able to solve

the unstructured problems of the patients, like a depression of obesity. Second, professional work is related to the intensive technology, which seems to be the primary process of the SS (Christensen et al., 2009; Thompson, 2007). Third, professional work aims at a societal value (Vriens et al., 2016). This value could be the value proposition or outcome of the SS: solve the unstructured disease of the patient (Christensen et al., 2009). Therefore, the SS might be a suitable context.

#### *4.3.3.4 Doubtful if needed when calculative measurements are formed*

Taking into account the conditions could be doubtful when the organization has clear calculative measurements (Vriens et al., 2016). This disadvantage of conditional accountability seems to have no link with the SS, because it presumably does use calculative measurements to a lesser extent. This weakens the assertion that the SS could be a suitable context for conditional accountability. The SS deals with unpredictable outcomes, which could be the consequence of an unknown relation between cause, disorder and treatment. Where the VAP and FN use calculation in its profit formula (like 5.000 members), the SS focus on expertise which is more difficult to express in numbers.

In summary, the researcher claims that the SS can be a suitable context for the conditional accountability. This implies that the conditional accountability really can work in this context. In addition, due to many and strong links, the advantages and disadvantages could relate to the SS. The authors that assert for the advantages of the conditional accountability might stimulate the use of a SS. Besides, the criticisms on conditional accountability might not be reasoned from the SS due to much overlap. This criticism and the disadvantages can be argued from the VAP. This is asserted because conditional accountability cannot optimally work in the context of the VAP and is sometimes contrasting. Lastly, the FN might be a doubtful context due to 'average' links: there can be authors that both stimulate and discourage the use of a FN based on the advantages or disadvantages of conditional accountability. As mentioned, conditional accountability is under conceptual level. However, the researcher argues that these insights in the context by using business models can help to stimulate the development of conditional accountability.

This chapter has discussed the suitable context for each from of professional accountability based on the three business models of Christensen et al. (2009). These insights provide a very important contribution to the literature of professional accountability as the context was not earlier investigated (see chapter 5). In addition, the researcher already mentioned some implications at the end of each subparagraph. These implications are further elaborated in the next chapter.

## 5. Discussion and conclusions

The previous chapter compared the forms of professional accountability and their elements with the business models and their characteristics. As a result, the elements of calculative, narrative and conditional accountability that either might have the strongest links or no links at all with the VAP, FN and SS were presented. Based on these outcomes, the researcher already cautiously provided some implications about the suitable context for each form of professional accountability. This chapter builds on these implications in order to answer the research question: “*What is the context under which the different forms of professional accountability work best?*”. This chapter consists of a discussion and conclusions to reflect upon this research. It discusses the theoretical implications (5.1), the practical implications (5.2), the limitations, recommendations and directions for future research (5.3) and the conclusions of this research (5.4).

### 5.1 Theoretical implications

In the last decennium, professionals in healthcare are increasingly called to account in their work (Vriens et al., 2016). Accountability is needed due to untrustworthy actions, malpractices and scandals of these professionals (O’Neill, 2002; Vriens et al., 2016). In other words, it seems that we can no longer ignore professional accountability in our society. The literature on professional accountability makes a distinction between three different forms: the calculative, narrative and conditional accountability. Each form can have advantages and disadvantages. This can indicate that there are proponents and opponents of the different forms of professional accountability. In addition, the literature mentions a few conditions, which suggests that a particular context could be relevant. However, these few conditions for calculative, narrative and conditional accountability are presented separately among the literature by many authors of various sources and dates and some without clear overarching names. So, whether and how each form of professional accountability works best in a particular context, where the conditions are collected together, is not clearly researched yet. Therefore, this research has seven essential theoretical implications.

First, before investigating the suitable context for each form of professional accountability, the researcher has provided overarching names to the few conditions that have been discussed in the existing literature. As mentioned, some of these conditions were presented without a clear overarching name, which can make it difficult to compare the conditions for each form of professional accountability. To simplify this comparison, the researcher chooses five overarching

names to refer to the conditions of professional accountability that are used in this research. These names refer to the context, the processes, the relations, the skills, the goals and the results.

Second, the researcher has collected many authors of various sources and dates in the literature together per element of professional accountability. For example, paragraph 2.3 described what has been discussed as the parties of professional accountability and paragraph 2.6 presented the conditions that were mentioned in the literature. So, all parties together, all conditions together. This merging also applies to all other elements of professional accountability used in this research: the views on a professional (paragraph 2.1), the perspectives on professional work (paragraph 2.1), the different forms and characteristics (paragraph 2.4) and advantages and disadvantages of professional accountability (paragraph 2.5). This collection was needed because many authors of various sources and dates separately present their vision in the literature on a particular element. For example, Banks (2004) argues that calculative accountability leads to alienation, Messner (2009) asserts for instrumental behavior and O'Neill (2002) claims for less opportunities to communicate. So in this example, different authors at various dates present their disadvantage on calculative accountability separately. However, this research combines all this knowledge per element in chapter 2 to provide a richer and neutral view on professional accountability.

Third, the researcher has compiled many authors of various sources and dates in the literature together for all elements per form of professional accountability. This compilation is shown in three overviews, namely Table 7, Table 8 and Table 9 in chapter 4. For instance, Table 7 shows all elements (view on professional, perspective on professional work, parties, characteristics, advantages, disadvantages and conditions) of calculative accountability. The same is applied for the narrative accountability (Table 8) and the conditional accountability (Table 9). This can provide a richer overview of each form of professional accountability. In addition, these overviews simplify the comparison with business models and can deliver pre-work to answer the research question.

Fourth, the researcher combined the types and characteristics of business models mentioned by different authors in order to investigate the suitable context for each form of professional accountability more easily. The authors that describe the types and characteristics of business models already seem to have a clear overlap with each other. The theory of Thompson (2007) and the theory of Stabell & Fjeldstad (1998) form the theoretical base of Christensen et al. (2009). Each author discusses his own vision separately, but the researcher mentions and presents overviews of the authors and their theory together in Table 3, paragraph 2.8 and Table 6, chapter 4.

For example, Table 6 shows that the long linked technology of Thompson (2007) relates to the SS of Christensen et al. (2009). By providing this knowledge into an overview, a richer view on the reality of business models of Christensen et al. (2009) are presented in an efficient way.

Fifth, the researcher has made a simplified schemata or summary of all theory discussed in chapter 2. This overview is presented in Appendix 1. It shows all elements per form of professional accountability in combination with all characteristics per business model. All elements of different sources, authors and dates about both professional accountability and business models can be seen at a glance. This overview can be a good theoretical basis for answering the research question.

Sixth, after providing overarching names to the conditions and collecting the literature on professional accountability and business models, the main contribution of this research is to provide the suitable context for each form of professional accountability by using business models. Proving this insight creates an important contribution to both the literature on professional accountability and business models. As already stated, the literature on professional accountability only mentions a few conditions for each form of professional accountability that are separately presented among many authors of various sources and dates. These few conditions indicate that a particular context for each form of professional accountability can be relevant. However, when each form works best in a particular context, where the conditions are collected together, is not clearly investigated yet. Perhaps there is, as each form has (dis)advantages and conditions, a particular context suitable. As a response, this research takes into account the context, or a contingency approach, in order to fully appreciate each form of accountability. These insights can show that the calculative, narrative and conditional accountability really can work and could supplement each other (Vriens et al., 2016). This in contrast to the current literature on professional accountability, where many authors seem to use a one-sided perspective by advocating for only one form of accountability. However, this research uses a multi-sided perspective by favoring all three forms and where each form can flourish. To investigate the suitable context, the business models of Christensen et al. (2009) are used. This creates a macro perspective to professional accountability in an organization. Vice versa, professional accountability might also contribute to the literature on business models, because an additional micro perspective is applied to the current debate about redesigning healthcare.

The following subparagraphs (5.1.1, 5.1.2 and 5.1.3) summarizes the results of chapter 4 about the suitable context for each form of accountability in order to answer the research question: *“What is the context under which the different forms of professional accountability work best?”*.

### 5.1.1 *Calculative accountability*

The calculative accountability can work best within a VAP. The researcher asserts this because both are mainly based on the same aspects: standardization, procedures/rules, targets and numbers. The calculative accountability can also work within a FN due to a similar focus on standardization, targets and numbers. However, the calculative accountability might have more overlapping aspects with the VAP than with the FN. Therefore, the VAP can be the most suitable context for calculative accountability. As mentioned, the characteristics, processes and skills of calculative accountability might have the strongest link with (all) the characteristics (primary process, interdependence, coordination, value proposition, profit formula, processes and resources) of the VAP and the FN. This implies that calculative accountability really can work in these contexts. The researcher asserts that this insight provides an important contribution to what already has been argued about calculative accountability. Calculative accountability might be one of the most criticized forms in the literature. Even though this criticism seems to be well-grounded, this research indeed shows that calculative accountability can work. As the VAP and the FN can be suitable contexts for calculative accountability, the advantages but also the disadvantages of this form might apply to the VAP and FN. Hence, the researcher argues that Christensen et al. (2009) have to be aware of this finding. Besides, the criticisms on calculative accountability might not be reasoned from the VAP and the FN due to much overlap. In contrast, those who argue for the advantages might stimulate the use of a VAP and FN. In addition, the parties and the goals of calculative accountability are not explicitly mentioned in the VAP and FN which might show no links. However, the researcher asserts that it is imaginable that professionals are also accountable to other parties in practice and the focus on healthcare can be one reason that there are no links with the goals. The goals and parties might not be the focus or can be a 'failure' of Christensen et al. (2009).

In contrast to the VAP and the FN, the SS seems not to be the suitable context for calculative accountability. This shows where calculative accountability might not work. The researcher argues that the aspects of calculative accountability, namely standardization, procedures and numbers, cannot be applied to the SS and even contradict this business model. These contradictions refer to the context, de-contextualization (Vriens et al., 2016) and the advantage of free of interpretation, faith and belief (Kamuf, 2007). Only the skills have a partly but strong link to all characteristics of the SS. Therefore, this could suggest that most criticism on calculative accountability seems to be reasoned from the SS. However, calculative accountability really can work in the VAP and the FN.

### 5.1.2 *Narrative accountability*

The narrative accountability can work best within a SS. The researcher argues this because the main aspects of narrative accountability, namely narration, communication, discussion, interaction, subjectivity and complexity, are used in (all) the characteristics (primary process, interdependence, coordination, value proposition, profit formula, processes and resources) of the SS. As addressed in chapter 4, the context, context-specific situations (Vriens et al., 2016), the possibility to communicate (O'Neill, 2002; Vriens et al., 2016), the perspective on professional work and processes of narrative accountability might have the strongest links with (all) the characteristics of the SS. In addition, all links can be noticed. This suggests that the narrative accountability really can work in a SS. This seems to be an important contribution to the existing literature on narrative accountability. As already appointed, the narrative accountability has been criticized and various disadvantages are mentioned by different authors. Despite of these arguments, which are conceivable according to the researcher, this research shows that the narrative accountability can really work in the SS or maybe related contexts. The researcher argues that the authors who mention the advantages of the narrative accountability might also speak with much praise about the SS. The researcher also asserts that, due to many and strong links, the advantages but also the disadvantages could relate to the SS which might be considered by Christensen et al. (2009). In addition, the criticisms on narrative accountability might not be reasoned from SS due to much overlap.

Besides, the FN seems to be a doubtful context for narrative accountability. On the one hand, the FN can use the main aspects of this form, namely communication, discussion, interaction and subjectivity. On the other hand, the implementation of these aspects might be hampered due to standardization, numbers and scale. Though, the strongest links are the possibility to communicate (O'Neill, 2002; Vriens et al., 2016) and the processes of narrative accountability with the primary process, interdependence, value proposition and processes of the FN. The FN is not linked to the goal of narrative accountability. Therefore, the researcher assumes that those who mention the advantages and disadvantages of narrative accountability could both stimulate and discourage the use of a FN. This might not present a clear preference for narrative accountability.

In contrast to the SS, the VAP might be not the suitable context for narrative accountability. This can be an example where this form might not work. The researcher assumes this because narration, communication, discussion, interaction, subjectivity and complexity that is used in the narrative accountability cannot benefit in the VAP due to a contrasting focus on standardization,

procedures and rules. As already asserted in chapter 4, the context of narrative accountability contradicts the VAP and also the skills relating to this form might not be used in the VAP. This can imply that criticism on narrative accountability and the disadvantages of this form emanate from the perspective of the VAP. The only link between narrative accountability and the VAP can be the parties which relates to the value proposition of this business model. However, the narrative accountability really can flourish in a context where organizations have the SS as business model.

### *5.1.3 Conditional accountability*

The conditional accountability might work best within a SS. The researcher assumes this because the main aspects of conditional accountability, conditions, goals and conduct seem to be general which can lead to links with the SS. In addition, the conditional accountability has overlap with the narrative accountability, which might have the most and strongest links with the SS. As mentioned in chapter 4, the characteristics, the context, context-specific situations (Vriens et al., 2016) and the view on professional work of conditional accountability might have the strongest links with (all) the characteristics of the SS (primary process, interdependence, coordination, value proposition, profit formula, processes and resources). This implies that the conditional accountability can work. This insight provides an important progression in the literature on conditional accountability. This form is developed after the calculative and narrative accountability and can be seen as a response to both forms. However, conditional accountability is still under conceptual level which can indicate that some aspects are unknown. This research contributes to the advancement of conditional accountability by taking into account the context. Therefore, the conditional accountability can get more identity, because the research seems to show that this form can work in a particular business model. The researcher remarks that there seems to be no link with the disadvantage that conditional accountability is doubtful when calculative measurements are formed (Vriens et al., 2016). However, the researcher argues that the conditional accountability can work in a SS. Due to many and strong links, the advantages but also the disadvantages could relate to the SS. The authors who assert for the advantages of the conditional accountability might stimulate the use of a SS. The criticisms on this form might not be reasoned from the SS.

Besides, the FN seems to be a doubtful context for conditional accountability. The researcher claims that, due to the general aspects of conditional accountability (conditions, goals and conduct), it can link to the FN. However, as already stated, the conditional accountability has

similarities with the narrative accountability, which can have weak links with the FN. The strongest links might be the characteristics and partly to the processes of conditional accountability with the primary process, interdependence, coordination, value proposition, profit formula and processes of the FN. The researcher asserts that, due to ‘average’ links, there might be no clear preference for this form. There could be a mix of authors that argue for the advantages and disadvantages of conditional accountability who can stimulate or discourage the use of FN in organizations.

Unlike the SS, the VAP seems to be not explicitly the suitable context for the conditional accountability. This is an example which can show where this form might not work. The researcher assumes this because the conditional accountability seems to have a different focus. This form does not explicitly aim at standardization, procedures and numbers, which are relevant for the VAP, but on conditions, goals and conduct. In addition, the conditional accountability has some overlap with the narrative accountability, which might have the least and weakest links with the VAP. As already mentioned in chapter 4, the VAP does not link with the disadvantage of unclear measurements (C. Groß, personal communication, March 21, 2018) and the context of conditional accountability. This suggests that criticism on conditional accountability and the disadvantages might be reasoned from the VAP. There are some links but most are weak, which seems to show no a clear preference for this form. The only link are the characteristics of conditional accountability with the primary process, interdependence, coordination, value proposition, profit formula and processes of the VAP. However, the conditional accountability really seems to work in organizations with a SS.

The seventh and last contribution of this research is that the researcher presented extensive overviews of all links between each form of professional accountability and its elements with the three business models and its characteristics. These overviews can be found in Appendices 2,3 and 4. For example, Appendix 2 shows a comparison between the calculative accountability and the three business models. Each element of calculative accountability is compared to each characteristic of each business model. These overviews are shown for three reasons. First, chapter 4 only presents either the strongest links or no links at all. These links can be interpreted as the most ‘striking’ or ‘important’ links. However, only presenting these links is not a complete representation of the contribution of this research. Therefore, the overviews present all links. Second, by showing all links, the researcher justifies for choosing the links that were presented in chapter 4, which seems to be the most striking or important links. Third, the overviews can be seen as pre-work for further research on professional accountability and business models in healthcare.

## 5.2 Practical implications

As mentioned in chapter 3, this research is typified as a theory-oriented scientific research with general aim to generate new knowledge, expand the knowledge or use a new perspective to the existing literature (Easterby-Smith et al., 2012; Vennix, 2010; Verschuren & Doorewaard, 2010). In particular, this research provides at a more fine-grained and theoretical understanding of the context for each form of professional accountability. So, the main contribution of this research relates to theoretical implications. However, this research might also have practical implications.

The results of this research in chapter 4 presented whether and how calculative, narrative and conditional accountability are linked to the context of a VAP, FN and SS. This link can provide guidelines for organizations in applying the best workable form of accountability, based on their business model(s). Therefore, the organization can create the appropriate value to society. Organizations characterized as a VAP need to have professionals who are calculative accountable. For example, eye clinics need to have nurses who fulfill six cataract surgeries a day by using the same routine for every patient: intake, preparation, anesthesia, operation and care. If the nurse realized these steps, she has fulfilled her task properly. In contrast, when this VAP deploys professionals who use moral imagination and tell complex clinical stories to the patient (narrative accountability), the eye clinic is not able to realize its profit formula of six cataract surgeries a day. Besides, firms featured as a SS might need conditional accountability or professionals who are narrative accountable. For example, general practices should have general practitioners who communicate with the patient about a depression. Gradually it becomes clear that the patient also has a hereditary predisposition to depression and is advised to use antidepressants. So, when the general practitioner uses narration (narrative accountability) and the organization reckons with the conditions (conditional accountability) to solve the problem of the patient, the task is accomplished. In contrast, when professionals only follow rules and procedures (calculative accountability), the hereditary predisposition was possibly not obsoleted. Companies defined as a FN should deploy professionals with calculative accountability but also narrative and conditional accountability can be applied. For example, the online community PatientsLikeMe should have network professionals that are able to work towards standards when patients need to be categorized per chronic disease (calculative accountability). These professionals actively communicate (narrative accountability) to patients when they provide service. The community PatientsLikeMe provides tools to the network professionals in order to listen, ask and talk to these patients (conditional accountability).

### **5.3 Limitations, recommendations and directions for future research**

Theory-oriented scientific research is entirely based on theory and hence seems have the limitation of less practical value (Hitt & Geer, 2012). Although pre-work for practice is delivered by giving different examples in healthcare, outlining the suitable context or business model for each form of professional accountability and providing overviews, this research has no empirical data used that can support the link between professional accountability and business models. Future research could investigate the link between professional accountability and business models by empirical scientific research. For example, interviews, observations and surveys can be applied to examine this link in organizations that relate to the healthcare sector, like hospitals or general practices.

A related limitation is that, as no empirical data is used, the results of this research are based on subjectivity which makes it hard to clearly measure strong, weak or no links. So, deciding the context under which the forms of professional accountability work best depends on the interpretation of the researcher, can differ per person and is negotiable. Future research can use more objectivity by formulating hypotheses that are empirically tested by, for example, quantitative research methods. Examples of hypotheses can be: ‘calculative accountability has a strong link with the VAP’ or ‘socializing processes for narrative accountability do not link with the FN’.

A third limitation might be that it is troublesome to make clear direct links between professional accountability and business models. As mentioned in chapter 3, a direct link means that one aspect is literally mentioned in both professional accountability and business models. For example, the VAP creates value by standardized treatment (value proposition) and the calculative accountability can be characterized by standards. The researcher prefers direct links because it seems to show the clearest overlap between professional accountability and business models. However, as addressed in chapter 2, the characteristics of each business model are interdependent. So, if one characteristic relates to an element of professional accountability, there also can be other characteristics linked to this element. Thus, there might be indirect links between professional accountability and business models. For example, calculative accountability can be characterized by standards, which seem to be literally mentioned in the primary process, value proposition, and profit formula of the VAP. However, the VAP can only realize these standards when nurses are deployed. These nurses might not literally mention standards. Therefore, the researcher argues that it is indirectly related to the characteristics of the VAP. Future research could split the characteristics of the business models in order to investigate each contribution separately.

A fourth limitation is that the business models of Christensen et al. (2009) are restricted to only one sector, namely the healthcare sector. Future research can use other sectors, like the ICT sector. In addition, the researcher has made a well-considered choice for business models to expand the literature on professional accountability. Future research could also broaden the literature on professional accountability by other concepts like the strategy or culture of an organization.

A fifth limitation is that the elements of professional accountability in this research are not exhaustive. The view on a professional, the perspective of professional work, parties, forms, characteristics, advantages, disadvantages and conditions are found in the literature without predetermining the elements. So, other elements could also be relevant. Future research can investigate the elements of professional accountability by using other authors, sources and dates.

## **5.4 Conclusions**

In the last decennium, professionals in healthcare are increasingly forced to show accountability in their work as a remedy for untrustworthy actions, malpractices and scandals (O'Neill, 2002; Vriens et al., 2016). It seems that we can no longer ignore professional accountability in our society. During this decennium, there might be a trend in the literature on how professionals are accountable. This trend could evolve from an objective form of accountability where professionals follow rules and procedures (calculative accountability) via a subjective form of accountability based on communication and interpretation (narrative accountability) to a conditional form relating to the goals and infrastructure of the organization (conditional accountability). Each form might have their own advantages, disadvantages and conditions. The conditions indicate that the context for each form of professional accountability might be relevant. However, these conditions are separately presented in the existing literature by many authors of various sources and dates. When each form works best in a particular context, where conditions are presented together, is not clearly researched yet and could be interesting to investigate. As each form seems to have its own (dis)advantages and conditions, there might be, like the contingency approach, a specific context suitable for each form of professional accountability in order to be fully appreciated.

This research provides a more fine-grained discussion of the conditions for professional accountability to create a better understanding of the context under which each form of professional accountability works best. To reach such a fine-grained understanding, this research elaborates on the conditions of professional accountability by reflecting on the three business models of

Christensen et al. (2009). These business models refer to the value added process (VAP), the facilitated network (FN) and the solution shop (SS). To investigate the suitable context for each form of professional accountability, the following research question is formulated: *“What is the context under which the different forms of professional accountability work best?”*

The results have shown that calculative accountability seems to work best within a VAP because both can mainly be based on the same aspects: standardization, procedures/rules, targets and numbers. The narrative accountability might work best within a SS because both might strongly relate to narration, communication, discussion, interaction, subjectivity and complexity. The conditional accountability can work best within a SS because its general aspects, conditions, goals and conduct, can be used in this business model and conditional accountability seems to have overlap with the narrative accountability, which can to work best in the SS. Taking into account the suitable context for each form of professional accountability suggests that each form really can work and could supplement each other (Vriens et al., 2016). These findings provide an important contribution to what already has been discussed about calculative, narrative and conditional accountability. Many authors seem to use a one-sided perspective by advocating for only one particular form of professional accountability. However, this research uses a multi-sided perspective by favoring all three forms and where each form can flourish in a particular context.

One important implication of this research is that due to many and strong links, not only the advantages but also the disadvantages of each form of professional accountability might apply to the suitable business model. Do we accept the possible disadvantages of the VAP, FN and SS that originate from the calculative, narrative and conditional accountability? Or do we prefer a new form of professional accountability? Or maybe an improved version of each form that still work best within one business model but without the disadvantages?

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## Appendices

## Appendix 1: Theoretical framework of professional accountability and business models

							Business models					
							VAP	FN	SS			
							View on professional	Professional work	Parties	Characteristics	Advantages and disadvantages	Conditions
Form of professional accountability	<b>Calculative accountability</b>	- Normative view	- Rules and procedures	- Hospitals - Managed care plans - Government	- Calculation, facts, evidences and numbers - Procedures, rules, targets, standards and control	- Easy access to professional work - Free of interpretation, faith and belief - Hard data measures performance of professionals - Indicators do not do justice to professional work; de-contextualization - Instrumental behavior, perverse incentives, self-interest, self-orientation and domination - Alienation - Less communication/interaction - Decrease confidence in competencies and ethics - Less power/dominance	- No context-specific situations and less complex institutional settings - Individualizing processes and processes with a genuine unit of account - Market related goals with the focus on profit maximization - Instrumental or external relations - Efficiency and effectivity in use of resources - Quantitative, measurable outcomes and performance indicators	- Long linked technology - Value chain - Sequential interdependence - Planning - Efficient/standardized treatment - Standardization/economies of scale - Inbound logistics/transformation/outbound logistics - Nurses	- Mediating technology - Value network - Pooled interdependence - Standardization - Linking clients/experts - Network scale/composition - Network promotion/service provision/keep infrastructure up and running - Network professionals	- Intensive technology - Value shop - Reciprocal interdependence - Mutual adjustment - Solve unstructured client problems - Expertise - Diagnose/design/implementation/evaluation - Experts		
	<b>Narrative accountability</b>	- Discourse view	- Knowledge and skills	- Professional colleagues - Professional organization - Professional associations - Patient	- Narration - Explain and discuss reasons for conduct - Communicative freedom - Subjective	- Communicate - Professional discretionary judgement - Include the context - Not suffice in creating confidence to wider public - Difficult to convey information about professional work to non-professionals	- Context-specific situations - Socializing processes - Improve care of the (specific) patient - Interdependence relations - Moral imagination, practice of empathic presence and mindful listening, read and interpret complex texts, write reflectively and tell complex clinical stories, reason with stories and engage in narrative ethics - Qualitative outcomes					
	<b>Conditional accountability</b>	- Discourse view	- Ideal-type characteristics	- Hospitals - Managed care plans - Government - Patient	- Reckon for the conditions for conduct - Take into account the goals - Allow for the infrastructure	- Easy access to information about the conditions for conduct - Fit the criteria of intelligent accountability of O'Neill (2002) - Include the context - Need monitoring for controlling conduct - Doubtful if needed when clear calculative measurements are formed - Unclear measurements - No control from outside, expensive, leaves out financial necessities	- Context-specific situations - Processes based on listening, asking questions and talking - Intensive technology - Realization of societal value - Interdependence relations - Specific knowledge and skills through extensive period of study and practice - Qualitative outcomes and quantitative outcomes					

## Appendix 2: Calculative accountability compared to business models

Calculative accountability	Business models and characteristics	
Characteristics	VAP	Primary process, interdependence, coordination, value proposition, profit formula, processes
	FN	Primary process, interdependence, coordination, value proposition, profit formula, processes
	SS	Interdependence, coordination, value proposition, processes
Advantages	VAP	Profit formula
	FN	Profit formula
	SS	No overlap
Disadvantages	VAP	Value proposition, profit formula
	FN	Coordination, value proposition, profit formula
	SS	Value proposition
Conditions	VAP	Primary process, interdependence, coordination, value proposition, profit formula, processes, resources
	FN	Primary process, interdependence, coordination, value proposition, profit formula, processes, resources
	SS	Primary process, interdependence, coordination, value proposition, profit formula, processes, resources
Parties	VAP	No overlap
	FN	No overlap
	SS	No overlap
A professional	VAP	Primary process, interdependence, coordination, profit formula, processes
	FN	Primary process, interdependence, coordination, profit formula, processes
	SS	Primary process, interdependence, coordination, processes
Professional work	VAP	Primary process, interdependence, processes
	FN	Primary process, interdependence, processes
	SS	Primary process, interdependence, processes

### Appendix 3: Narrative accountability compared to business models

Narrative accountability	Business models and characteristics	
Characteristics	VAP	No overlap
	FN	Primary process, interdependence, value proposition, processes
	SS	Primary process, interdependence, coordination, processes
Advantages	VAP	No overlap
	FN	Primary process, interdependence, value proposition, processes
	SS	Primary process, interdependence, coordination, value proposition, profit formula, processes
Disadvantages	VAP	No overlap
	FN	No overlap
	SS	Profit formula, resources
Conditions	VAP	Interdependence
	FN	Primary process, interdependence, value proposition, processes
	SS	Primary process, interdependence, coordination, value proposition, profit formula, processes
Parties	VAP	Value proposition
	FN	Primary process, interdependence, value proposition
	SS	Primary process, interdependence, coordination, value proposition
A professional	VAP	No overlap
	FN	Primary process, interdependence, value proposition and processes
	SS	Primary process, interdependence, coordination, processes
Professional work	VAP	No overlap
	FN	No overlap
	SS	Profit formula

## Appendix 4: Conditional accountability compared to business models

Conditional accountability	Business models and characteristics	
Characteristics	VAP	Primary process, interdependence, coordination, value proposition, profit formula, processes
	FN	Primary process, interdependence, coordination, value proposition, profit formula, processes
	SS	Primary process, interdependence, coordination, value proposition, profit formula, processes
Advantages	VAP	No overlap
	FN	No overlap
	SS	Primary process, interdependence, coordination, value proposition, profit formula
Disadvantages	VAP	Profit formula
	FN	Profit formula
	SS	No overlap
Conditions	VAP	Interdependence, value proposition
	FN	Primary process, interdependence, value proposition, processes
	SS	Primary process, interdependence, coordination, value proposition, profit formula, processes
Parties	VAP	Value proposition
	FN	Primary process, interdependence, value proposition
	SS	Primary process, interdependence, coordination, value proposition
A professional	VAP	No overlap
	FN	Primary process, interdependence, value proposition, processes
	SS	Primary process, interdependence, coordination, processes
Professional work	VAP	Value proposition
	FN	Value proposition
	SS	Primary process, profit formula, value proposition