Copyright Statement

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

This thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognize the author's right to be identified as the author of this thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from their thesis.

General copyright and disclaimer

In addition to the above conditions, authors give their consent for the digital copy of their work to be used subject to the conditions specified on the Library Thesis Consent Form and Deposit Licence.
A theory of collective participation on leadership of an innovation and its development in a Health-IT context

Elica Safari Mehr
Abstract

Health-IT (HIT) innovations aiming to transform healthcare delivery have encountered challenges associated with social factors, e.g. leadership. Contextual factors have rarely been investigated in HIT innovation studies. Since innovation development and leadership are both social processes, it brought me to the question: How do patterns of behaviour in leadership and development of large scale innovations in the HIT context affect each other? I use a social construction view of leadership to examine how people interact and collectively contribute to leadership of HIT innovations, while an innovation is being developed. The aim is to develop a theory that identifies main categories and their inter-relationships to explain the link between innovation development and its leadership process.

The research methodology appropriate for this interpretive study is Grounded Theory, which enables an inductive approach of analysing data and building a theory grounded in it. Data were gathered from participant observations, documents, and interviews, to explore the social context selected, a Health-IT innovation development programme in New Zealand.

After conceptualisation and categorisation of the interview data and interweaving the findings from observations and document analysis, one core category emerged, labelled ‘intervening in the health system’. This category describes the main behaviour found in the interactions of people who were involved with the innovation, its leadership, and governance processes, associated with an intervention. Detailed data coding revealed three high level categories (i.e., HIT innovation, leadership relationships, and governance) and interconnected subcategories. The theory indicated that we should think of leadership as more than creating value and influencing people. We need to find relationships that can adjust behaviours, and provide supporting conditions for the innovation process. It also revealed that we should consider the impact of complexity and emergence, as the characteristics of the development process, on what influences people.

The theory can be used in leadership education to reduce ambiguity of the relational perspective on leadership and how it can be studied without examining individual’s traits and behaviour. This theory is a substantive theory that can be used by other researchers as it allows comparing the categories with other contexts and extending them toward a more abstract theory (i.e., a formal theory). The strength of the theory is on the detailed elaboration of how concepts are systematically generated and grounded in data. The weakness of it, though, is that it needs to be tested. Therefore, future studies in HIT contexts can apply the theory and examine it when patients’ experience is explored in the innovation development (as one of the limitations of the study).
Dedication

This thesis is dedicated to the memory of Seyed Bagher Ghazimirsaeid, my grandfather, 1938 - 2011.
Acknowledgments

I would like to acknowledge and thank Dr. Karen Day and Dr. Peter Carswell, my supervisor and co-supervisor. They have guided and encouraged me with their wisdom and insight through this long journey. Their constant support, patience, and direction were critical for my success.

I also want to express my gratitude to those who gave me the opportunity to conduct this field work, especially the National Institute for Health Innovation for their support and advice.

Thanks also to the participants of the study who generously gave their time and knowledge for the purpose of this research. This thesis would have not been accomplished without their contribution.

I also want to acknowledge Lisa Morice for her great advice as the proofreader of the thesis, as permitted by The University of Auckland policy on proof reading.

Many thanks to my friends and colleagues, especially Nouran Ragaban, who have been accompanying me in this PhD life and have patiently listened to my thoughts and struggles.

Above all, I am truly grateful to the one who inspired me to start this journey and gave his dedicated love and support during this time. I would like to thank Soheil Bakhshi, my husband and my best friend.
Table of Contents

Abstract ................................................................................................................................. ii
Dedication ............................................................................................................................ iii
Acknowledgments .............................................................................................................. iv
Table of Contents ............................................................................................................... v
List of Figures ...................................................................................................................... ix
List of Tables ....................................................................................................................... x
Glossary of Terms .............................................................................................................. xi
List of Acronyms ................................................................................................................. xii

CHAPTER 1. Introducing the thesis .................................................................................. 1
  1.1. Introduction ............................................................................................................... 1
  1.2. Justifying the study .................................................................................................... 3
  1.3. Refining the question and boundaries of the study ................................................... 6
  1.4. Context (NZ health system) ..................................................................................... 7
      1.4.1. Introducing a national Health-IT programme ...................................................... 11
  1.5. Conclusion and structure of the thesis ...................................................................... 13

CHAPTER 2. Exploratory review of literature ................................................................ 15
  2.1. Introduction ............................................................................................................... 15
  2.2. Behavioural and Organisational change .................................................................. 17
      2.2.1. Nature of change (rate and scale) .................................................................... 21
  2.3. Leadership (existing assumptions and selected lens) .......................................... 24
      2.3.1. Existing assumptions ....................................................................................... 24
      2.3.2. Selected lens .................................................................................................... 26
  2.4. Innovation in Health-IT context ............................................................................. 30
      2.4.1. Definition of innovation .................................................................................. 32
  2.5. Gap in literature (leadership of Health-IT innovation area) .................................. 34
  2.6. Conclusion ................................................................................................................. 37

CHAPTER 3. Research strategy and methods ................................................................. 39
  3.1. Introduction ............................................................................................................... 39
  3.2. Research strategy ..................................................................................................... 39
      3.2.1. Qualitative design ......................................................................................... 39
      3.2.2. Epistemology and ontology (research philosophy) ........................................ 40
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2.3. Grounded Theory Methodology</td>
<td>44</td>
</tr>
<tr>
<td>3.3. Methods of data collection &amp; analysis</td>
<td>49</td>
</tr>
<tr>
<td>3.3.1. Participant observation</td>
<td>49</td>
</tr>
<tr>
<td>3.3.2. Document analysis</td>
<td>52</td>
</tr>
<tr>
<td>3.3.3. Convergent interviewing</td>
<td>56</td>
</tr>
<tr>
<td>3.3.4. In-depth interviews</td>
<td>61</td>
</tr>
<tr>
<td>3.4. Conclusion</td>
<td>65</td>
</tr>
<tr>
<td>CHAPTER 4. Getting to know the shared care programme (observation)</td>
<td>66</td>
</tr>
<tr>
<td>4.1. Introduction</td>
<td>66</td>
</tr>
<tr>
<td>4.2. Self-positioning</td>
<td>67</td>
</tr>
<tr>
<td>4.3. Data collection and analysis</td>
<td>68</td>
</tr>
<tr>
<td>4.3.1. Data collection notes</td>
<td>68</td>
</tr>
<tr>
<td>4.3.2. Interpreting and analysing notes</td>
<td>69</td>
</tr>
<tr>
<td>4.4. Observed facts</td>
<td>70</td>
</tr>
<tr>
<td>4.4.1. The managing company: group B</td>
<td>71</td>
</tr>
<tr>
<td>4.4.2. The leadership and governance group: group A</td>
<td>72</td>
</tr>
<tr>
<td>4.5. Reflections on my observations</td>
<td>75</td>
</tr>
<tr>
<td>4.5.1. Innovation development</td>
<td>76</td>
</tr>
<tr>
<td>4.5.2. Hybrid innovation</td>
<td>82</td>
</tr>
<tr>
<td>4.5.3. Possible meanings behind relationships</td>
<td>84</td>
</tr>
<tr>
<td>4.6. Discussion</td>
<td>88</td>
</tr>
<tr>
<td>4.7. Conclusion and next stage</td>
<td>89</td>
</tr>
<tr>
<td>CHAPTER 5. Beneath the written messages</td>
<td>90</td>
</tr>
<tr>
<td>5.1. Introduction</td>
<td>90</td>
</tr>
<tr>
<td>5.2. Document analysis methods</td>
<td>92</td>
</tr>
<tr>
<td>5.2.1. Documents preparation or unitising</td>
<td>92</td>
</tr>
<tr>
<td>5.2.2. Coding Settings and techniques</td>
<td>94</td>
</tr>
<tr>
<td>5.3. Findings</td>
<td>95</td>
</tr>
<tr>
<td>5.3.1. Discriminating analysis</td>
<td>98</td>
</tr>
<tr>
<td>5.3.2. Individual concept maps</td>
<td>106</td>
</tr>
<tr>
<td>5.4. Discussion</td>
<td>113</td>
</tr>
<tr>
<td>5.5. Conclusion and next stage</td>
<td>114</td>
</tr>
<tr>
<td>CHAPTER 6. Innovating as you go</td>
<td>116</td>
</tr>
<tr>
<td>6.1. Introduction</td>
<td>116</td>
</tr>
</tbody>
</table>
6.2. Main issues of innovation development .......................................................... 118
  6.2.1. Adoption and behavioural change .......................................................... 120
  6.2.2. Cracks in the innovation ........................................................................ 123
  6.2.3. Innovation properties ............................................................................ 126
  6.2.4. Leadership ............................................................................................ 128
  6.2.5. Innovation development stages ............................................................. 132
  6.2.6. End users’ demand ................................................................................ 133
  6.2.7. Change requirements and consequences .............................................. 135
6.3. Discussion ..................................................................................................... 137
6.4. Conclusion and next stage ........................................................................... 139
CHAPTER 7. Identifying the core category of the theory ...................................... 140
  7.1. Introduction ................................................................................................ 140
     7.1.1. Relational lens .................................................................................... 142
  7.2. The core category: Intervening in the health system ............................... 143
     7.2.1. HIT Innovation ................................................................................ 144
     7.2.2. Leadership ....................................................................................... 161
     7.2.3. Governance ...................................................................................... 189
     7.2.4. Conflicts: A contextual category ...................................................... 194
  7.3. Discussion .................................................................................................. 197
  7.4. Conclusion .................................................................................................. 199
CHAPTER 8. Theory building .............................................................................. 200
  8.1. Introduction ................................................................................................ 200
     8.1.1. Method .............................................................................................. 201
  8.2. Connections between categories ............................................................. 202
     8.2.1. Highlighted connections found .......................................................... 203
     8.2.2. The integrative diagram ..................................................................... 213
     8.2.3. Comparisons with literature ............................................................. 216
  8.3. Discussion .................................................................................................. 227
  8.4. Conclusion .................................................................................................. 229
CHAPTER 9. Conclusion ...................................................................................... 230
  9.1. Final introduction ....................................................................................... 230
  9.2. Summary of final findings ...................................................................... 230
     9.2.1. Intervening in health system ............................................................. 230
  9.3. Evaluating the study ................................................................................. 243
9.3.1. Quality of the interpretive approach ................................................................. 244
9.3.2. Quality of the theory .......................................................................................... 248
9.3.3. Limitations of scope ......................................................................................... 250
9.4. Implications of the theory ..................................................................................... 251
9.5. Research contribution ......................................................................................... 252
9.6. Recommendations for future actions ................................................................. 253
9.7. Conclusion ............................................................................................................. 253
Appendices .................................................................................................................... 255
Appendix one: Interview schedules ............................................................................. 255
Appendix two: The seven categories ........................................................................... 256
References ....................................................................................................................... 258
List of Figures

Figure 3-1: The position of research paradigm ........................................................................... 43
Figure 3-2: Shared care programme’s phases at the time of observations ................................. 51
Figure 3-3: Conceptualisation layers, adopted from Glaser (1978) and Urquhart (2013) .......... 64
Figure 4-1: Schematic representation of the group A and B’s membership and their relationships/links .................................................................................................................................................. 73
Figure 5-1: Automatic concept mapping of the whole data .......................................................... 97
Figure 5-2: Discrimination of themes for phase 1 ..................................................................... 99
Figure 5-3: Discrimination of themes for phase 2 .................................................................... 103
Figure 5-4: Discrimination of themes for phase 3 .................................................................... 105
Figure 5-5: Individual concept map for Phase 1 ...................................................................... 108
Figure 5-6: Individual concept map for Phase 2 ...................................................................... 110
Figure 5-7: Individual concept map for Phase 3 ...................................................................... 112
Figure 6-1: Objectivist push – example open codes and quotes ............................................. 124
Figure 7-1: Analytical process of the study .............................................................................. 141
Figure 7-2: Complexity – Multi organisational process; sample quotes ................................. 146
Figure 7-3: Complexity – shift in thinking; sample quotes ....................................................... 148
Figure 7-4: Influential hub - sample open codes and quotes ..................................................... 164
Figure 7-5: Informal influencers, sample quotes ...................................................................... 167
Figure 7-6: Usefulness perceptions, sample quotes ................................................................. 182
Figure 7-7: Overseeing tasks, sample quotes .......................................................................... 191
Figure 7-8: Reflecting leadership, sample open codes and quotes ......................................... 193
Figure 8-1: Connections between innovation development and influence ............................. 204
Figure 8-2: Connections between innovation development and value creation ...................... 205
Figure 8-3: Connections between innovation development and supporting change ............. 206
Figure 8-4: Connections between innovation development and control ................................ 207
Figure 8-5: Connections between properties of innovation and influence ............................. 208
Figure 8-6: Connections between properties of innovation and value creation ..................... 208
Figure 8-7: Connections between overseeing tasks and influence ....................................... 209
Figure 8-8: Connections between Overseeing tasks and control .......................................... 210
Figure 8-9: Connections between resources and influence ...................................................... 211
Figure 8-10: Connections between development process and resources ............................... 211
Figure 8-11: Connections between conflicts and the other categories ................................ 213
Figure 8-12: Leadership of HIT innovations (LHIT) theory, the integrative diagram ............ 215
List of Tables

Table 1-1: Structure of the thesis .......................................................... 13
Table 2-1: Theories of change with example followers ..................................... 20
Table 2-2: Scale and rate of change .......................................................... 23
Table 3-1: Types of the documents analysed ................................................ 53
Table 5-1: Summary of findings from individual maps ..................................... 113
Table 6-1: Main issues of the innovation ..................................................... 119
Table 6-2: Quotation coding system and its meaning ..................................... 119
Table 6-3: Adoption and behavioural change category - convergent interviews........ 120
Table 6-4: Cracks in the innovation category - Convergent interviews ............... 124
Table 6-5: Innovation properties category - convergent interviews .................. 126
Table 6-6: Leadership category - convergent interviews ................................ 129
Table 6-7: Innovation development stages - convergent interviews .................. 132
Table 6-8: The end users’ demand category - convergent interviews ................. 134
Table 6-9: Change requirements and consequences - convergent interviews ....... 135
Table 7-1: Emergence of the core category: Intervening in the health system ....... 143
Table 7-2: Quotation coding system – in-depth interviews ................................ 144
Table 7-3: HIT Innovation category, conceptualisation ................................... 145
Table 7-4: Characteristics of the development process - conceptualisation .......... 145
Table 7-5: Innovation development stages .................................................. 151
Table 7-6: Implementation stage: change management, conceptualisation .......... 154
Table 7-7: Adoption concept, conceptualisation .......................................... 156
Table 7-8: Leadership category, conceptualisation ....................................... 161
Table 7-9: Influence subcategory, example open codes .................................. 162
Table 7-10: Control subcategory, example open codes ................................... 170
Table 7-11: Value creation subcategory, sample open codes ............................ 177
Table 7-12: Supporting change subcategory, sample open codes ..................... 183
Table 7-13: Governance category - conceptualisation .................................... 189
Table 7-14: Conflicts category, conceptualisation with example open codes ....... 195
Table 8-1: Summary of the core category .................................................. 202
Table 8-2: Number of connections between innovation and leadership subcategories .... 204
Table 8-3: Number of connections between leadership and governance subcategories .... 209
Table 8-4: Connections between conflicts and the other categories ................. 211
Table 8-5: Comparing the connections found with the literature ..................... 226
## Glossary of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care team</td>
<td>A team including anyone involved with the care of a patient, across different healthcare settings.</td>
</tr>
<tr>
<td>Group A</td>
<td>The high level project management group of the shared care programme led by the managing company.</td>
</tr>
<tr>
<td>Group B</td>
<td>The very high level leading and governance group of the shared care programme.</td>
</tr>
<tr>
<td>Health-IT (HIT, eHealth)</td>
<td>e-health or HIT refers to the application of information and communication technology in health systems to improve or enable health care.</td>
</tr>
<tr>
<td>Implementation of innovation</td>
<td>Activities that are performed by internal or external members to indicate and influence usage of innovations, users’ roles, and their interactions with the innovation (Lewis &amp; Seibold, 1993).</td>
</tr>
<tr>
<td>Information System (IS)</td>
<td>In this study, IS is defined based on one of the branches of Medline’s taxonomic structure of Medical Informatics. It is one of the areas of studies using the term eHealth that refers to application of electronic information systems, networks, and clinical decision supports to improve and facilitate health care (Pagliari et al., 2005).</td>
</tr>
<tr>
<td>Innovation development process</td>
<td>The process by which an innovative idea goes through a series of steps to be transformed into a concrete reality and implemented in the existing system (Van de Ven &amp; Poole, 1990).</td>
</tr>
<tr>
<td>Innovators</td>
<td>Anyone in the programme who contributes and has input into the development of the basic idea into concrete reality, including technical teams, change management teams, and users (clinical/administrative users and patients).</td>
</tr>
<tr>
<td>Long Term Conditions (LTC)</td>
<td>An ongoing condition that cannot be cured but can be controlled at present. LTCs have significant adverse impacts on patients’ quality of life and on expenditures in health care. Sometimes chronic conditions and chronic diseases are used interchangeably with LTCs (Harrison, Clegg, Conroy, &amp; Young, 2015; Ministry of Health, 2009).</td>
</tr>
<tr>
<td>Programme vs Project</td>
<td>A programme includes a group of related projects and coordinates them in a way that the benefits are greater than those achievable by separate management of the projects (PMI, 2008).</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>People or groups involved in a project, who have impact on the outcome, or are affected by it (PMI, 2008).</td>
</tr>
<tr>
<td>Structures</td>
<td>Structures are the resources and regulations that can be applied to create and to maintain systems (Lewis &amp; Seibold, 1993).</td>
</tr>
<tr>
<td>Systems</td>
<td>Systems are “regularised relations of interdependence between groups and individuals” (Giddens, 1979, p. 66).</td>
</tr>
<tr>
<td>The shared care programme (the programme)</td>
<td>The selected case for data collection purposes of the study.</td>
</tr>
<tr>
<td>The Strategy</td>
<td>The New Zealand Health Strategy</td>
</tr>
</tbody>
</table>
# List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>DHB</td>
<td>District Health Board</td>
</tr>
<tr>
<td>EHR</td>
<td>Electronic Health Record</td>
</tr>
<tr>
<td>GP</td>
<td>General Practitioner, Medical Doctor</td>
</tr>
<tr>
<td>GT</td>
<td>Grounded Theory</td>
</tr>
<tr>
<td>IS</td>
<td>Information System</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>LTC</td>
<td>Long Term Condition</td>
</tr>
<tr>
<td>NHITB</td>
<td>National Health IT Board</td>
</tr>
<tr>
<td>PHO</td>
<td>Primary Health Organisation</td>
</tr>
<tr>
<td>PMS</td>
<td>Patient Management Systems</td>
</tr>
</tbody>
</table>
CHAPTER 1. Introducing the thesis

1.1. Introduction

This thesis is a study on leadership of Health-IT innovations. It uses Grounded Theory (GT) as the overall methodology to explore innovation development and leadership processes in a New Zealand Health-IT initiative. The results provide a substantive theory to describe the inter-relationships between three major categories emerging from data: Health-IT innovation, leadership relationships, and governance.

Information technology (IT) has redefined traditional models of work and knowledge management in business (T. Cummings & Worley, 2014). Many organisations adopting IT capability are facing technical, managerial, and socio-cultural challenges (Zhu, Kraemer, & Dedrick, 2004). In addition, these organisations have had to respond to rapidly changing conditions as a result of globalisation and advancements in information technology in order to survive in this complex environment (T. Cummings & Worley, 2014). Some industries, such as financial services, are much more information driven and have taken advantage of IT to a larger extent. For instance, in the United States (US) in 2002, financial companies spent eight percent of their income on IT (Zhu et al., 2004). In New Zealand, in 2008, 64 percent of businesses were placing online orders, and 42 percent accepting orders via the internet (Statistics New Zealand, 2015).

The health sector has been slower to adopt IT and therefore realise the potential of HIT (Chin, 2004; Kellermann & Jones, 2013; Shortliffe, 2005; Thouin, Hoffman, & Ford, 2008). A 2005 study by the RAND Corporation, projected annual savings for the US health system of more than $81 billion per year by adopting HIT (Kellermann & Jones, 2013). Context-specific concerns, such as information privacy and “dehumanizing” of the healthcare delivery system (Shortliffe, 2005, p.1223), as well as technical barriers, have contributed to the slow uptake, and also the failure of healthcare professionals to adapt care processes through Health-IT (HIT) innovations (Kellermann & Jones, 2013; Thouin et al., 2008).

Despite all these challenges, many countries, especially those with national and centralised health systems have attempted to introduce large scale HIT innovations with central governance (Shortliffe, 2005). Among them, New Zealand, the United Kingdom (UK), and Scandinavian countries have invested in primary care clinical information systems and communication networks for transferring health data. However, despite huge amounts of money being invested, there have been failures associated with the model of change implemented and contextual factors, including leadership (Altmann & Michael, 2011; Bowden & Coiera, 2013; Coiera, 2007; Coiera, 2009; Eason, Dent,
Waterson, Tutt, & Thornett, 2012). For example, a large scale Health-IT initiative in the United Kingdom (UK), the National Programme for IT (NPfIT), was closed down after a huge investment of $20.6 billion (Greenhalgh, Russell, Ashcroft, & Parsons, 2011); and a $27 billion allocation in the United States (US) to promote uptake by health care providers of Electronic Health Records (EHRs), have not led to the success achieved in New Zealand with a budget of only NZD 5 million (Chuah, 2011; Greenhalgh et al., 2011). This raised my interest in this study of New Zealand’s approach, as one of three developed countries that have strongly adopted eHealth (Gray, Bowden, Johansen, & Koch, 2011).

Furthermore, contextual factors and more specifically leadership of HIT initiatives have been raised as issues in the literature, that implied the need for an integrated study to elaborate the role and impact of leadership. A view of IT as a support feature and cost burden rather than a strategic business planning asset (Deloitte, 2015; Shortliffe, 2005) and a failure to engage clinical users in the process of developing HIT innovations (Altmann & Michael, 2011), are among the problems that have affected the leadership of these change movements. Factors such as leadership have been only sparsely investigated in HIT innovation studies (Goldzweig, Towfigh, Maglione, & Shekelle, 2009) and this gap provided the motivation for exploring the research problem, and the focus of the research question. The purpose of innovation development was selected as the focus of the study to address the broader issue of Health-IT change processes and the leadership problem. Many HIT studies directly or indirectly refer to HIT initiatives as innovations (Heeks, 2006; Hwang & Christensen, 2008; Koch, 2006; Lumsden & Gibson, 2011; Palmieri, Peterson, & Corazzo, 2011). An exploration of the literature was required to clarify the stance taken in this study about innovation, and how it is defined. In this study innovation is viewed as processual and made up of different overlapping stages by which a new idea is developed into reality (Baregheh, Rowley, & Sambrook, 2009; Van de Ven & Poole, 1990). Smith and colleagues’ systematic review indicated that leadership and innovation processes are key factors for the management of innovation in organisations (M. Smith, Busi, Ball, & Van der Meer, 2008). However other studies of innovation have mostly discussed how to be more innovative, rather than how to manage innovation processes and what happens inside this process (Lewis & Seibold, 1993; M. Smith et al., 2008; Van de Ven & Poole, 1990). Therefore, this gap also contributed in forming the research problem to address the issues that exist in leadership of Health-IT innovations. The research problem aimed to help an understanding of people’s behaviour in Health-IT innovation processes, and how processes can be led.

In this chapter I justify the rationale behind the study, present the research question and introduce the overall field of study, and its context. In order to narrow down the research problem to a focused
research question, I conducted a limited, exploratory review of literature at the outset of the study (see Chapter 2 for details). The important points from this review are referenced during this chapter as I elaborate how the research question was developed.

1.2. Justifying the study

Many researchers have studied IT capability in healthcare as they believe it can improve quality, safety and accessibility while reducing costs and errors (Black et al., 2011; Dal Molin, 2011; Goldzweig et al., 2009; Ingebrigtsen et al., 2014; Øvretveit, Scott, Rundall, Shortell, & Brommels, 2007; Schoen, Osborn, How, Doty, & Peugh, 2009; Szydlowski & Smith, 2009; Warren et al., 2010). The advent of Health-IT (eHealth) has brought new approaches and mind-sets for improving healthcare, using information and communication technology (Eysenbach, 2001; Pagliari et al., 2005). Innovative ways of working and shared, global approaches to improve healthcare have been enabled by developments in IT (Eysenbach, 2001). However, taking up Health-IT capabilities in healthcare delivery systems is accompanied by challenges, as it means changing the model of work.

Traditionally, change in organisations has been studied with the assumption that change can be implemented in a planned approach, to reach the next state of stability (state models) (Bullock & Batten, 1985; Burnes, 2004b; Lewin, 1947). However, in the complex environments in which organisations tend to rapidly transform themselves, a bottom-up emergent approach to change is considered more appropriate. Opponents of the planned approach have criticised it as being suitable for small-scale incremental change and its presumption that all stakeholders are willing to change their practice (Todnem By, 2005). Emergent continuous change and promotion of innovation are seen as alternative ways to adapt to the environmental conditions (Burnes, 2005).

The emergent approach to managing change does not mean there is no planned change in organisations. Instead it elaborates on the fact that even if a planned programme is introduced by management, they cannot control it. It also means management cannot control how organisational members respond to it, or how their thinking and sensemaking of the change will affect their actions (Johansson & Heide, 2008). Sensemaking is the “interplay of action and interpretation” and is a process of organising (Weick, Sutcliffe, & Obstfeld, 2005, p. 409). As Tsoukas, and Chia (2002) explained, “change programs trigger ongoing change”, but once it is started it cannot be anticipated and is uncertain (p. 578). Followers of the emergent approach believe change is produced via communication (J. D. Ford & Ford, 1995), where communication is not a tool but a socially constructed process (Berger & Luckmann, 1966).
In order to narrow the research problem, it was decided to focus on micro-level ongoing change and look into emergent approaches to change (Weick & Quinn, 1999), and then look further for sources or human agents of emergent change (Tsoukas & Chia, 2002). For the purpose of studying HIT innovations, the newer approaches to change promoting flexibility and innovation in organisations are more compatible than a focus on planned approaches (Burnes, 2005). The emergent approach helps in dealing with complex, changing environments (Dunphy & Stace, 1993) and opens up opportunities for innovation (T. Cummings & Worley, 2014).

The rate and scale of change attached to a Health-IT change initiative provided another possible parameter for narrowing down the research problem. Studies of organisational change have described these characteristics of change in terms of fine-tuning (small) adjustments, incremental-gradual change, and rapid transformation (Dunphy & Stace, 1993; Gersick, 1991; Pettigrew, 1987; Todnem By, 2005). In addition, Brown and Eisenhardt (1997) described a continuous type of change, falling between incremental and radical change. These changes occur at a lower scale than radical change, but together can result in a transformation (Weick & Quinn, 1999). Therefore, for this study it was more appropriate to look into a HIT innovation intended to result in large scale change, whether by continuous changes or a radical change.

As mentioned in the introduction, a challenge accompanying HIT initiatives was leadership of the change within organisations. According to studies that have followed the emergent perspective of change, the focus should not be guidelines for leaders and a view of them as instructors, as “no universal rules” can be found for leadership of change (Bamford & Daniel, 2005, p. 394; Burnes, 2004a). These studies have tended to view leadership as a social process and leaders as those who channel the crowd, and also make important contributions to organising processes (Hosking, 1988). If the details of the desired change are vague and an open process is required, by which many people are involved, then an emergent approach should be allowed to happen (Burnes, 2004a). A shift in culture and attitudes requires that the agents of change are everyone who is affected by it (Chapman, 2002). It is more helpful to have participation of professionals in decision making and in taking on leadership roles (Parlalis, 2011).

This interesting process and social view of leadership was explored further to find the theoretical assumptions underlying it and to help draw more boundaries for the research problem. Leadership studies are primarily concerned with individual leaders (Avolio, Walumbwa, & Weber, 2009; Shamir, Dayan-Horesh, & Adler, 2005), and the qualities required to influence groups or members of an organisation. They also focus on situational factors that affect the behaviours and traits of leaders (B. M. Bass, 1990; R. Bass & Bass, 2008; Larsson & Vinberg, 2010; Northouse, 2009; Van Vugt, 2006; Yukl,
In contrast, a process-oriented view of leadership has explored organising activities, in which a new social order is negotiated by its members (Hosking, 1988). According to this approach, the reality of leadership is explored through the interactions between members not their individual characteristics (Bradbury & Lichtenstein, 2000).

This social view of leadership believes in ongoing change in social entities that is happening through communications (J. D. Ford, Ford, & McNamara, 2002; Johansson & Heide, 2008; Weick & Quinn, 1999). Following this perspective, Uhl-Bien (2006) developed the Relational Theory of Leadership (RTL) that emphasised how leadership should be defined and explored as a social process of influence in which people collectively contribute in bringing order and organising change. Understanding the meaning behind communication and language are common focuses in relational leadership studies (Fairhurst & Uhl-Bien, 2012; Hosking, Dachler, & Gergen, 1995). However, it is important not to get stuck in what individuals say or their position in networks of communications. Leaders need to recognise leadership as collective acts socially constructed in micro and macro processes (Cunliffe & Eriksen, 2011).

I chose to follow the social/relational view of leadership in studying HIT innovations, and so it was appropriate to use an interpretive account to explore how people interact in local-cultural-historical processes (Hosking, 2006), and therefore co-create leadership of these innovations. In fact, choosing a social/relational perspective and avoiding the individual focus in studying leadership, provided a lens to further focus the area of interest and develop the research question. It should be emphasised that relational theory of leadership is not considered as an approach to, or a style of, leadership but explains the philosophical perspective behind the definition of leadership used in this study.

The last means for focusing the research problem was to limit data collection to a specific HIT innovation within a health system. The New Zealand Health System was considered an interesting place for testing and researching HIT change initiatives, due to its relatively small size, young population and one-tier model of governance (Pollock, 2012). The Global Information Technology Report 2015 ranked NZ second (among 143 countries) in terms of conditions and a regulatory system favourable to ICT development and innovation (Dutta, Geiger, & Lanvin, 2015). There has been almost 100 percent IT uptake in primary care within the health system (Mossialos, Wenz, Osborn, & Anderson, 2015). Given that, a national Health-IT innovation intended to bring large scale change was seen as an interesting context for exploring leadership from a relational perspective, and its inter-relationships with the innovation development process.
As there are limited studies in the intersection of these two social processes of Health-IT innovation and leadership, it seemed worth developing a theory that explains their inter-relationships for use in future practice and research. Moreover, most existing HIT studies have followed an individualistic stance in dealing with leadership, implying a need for an emergent change approach, and development of a social construction of leadership for Health-IT initiatives. The existing literature showed a relative neglect of a theoretical stance (lack of relational studies) and lack of theories to address this research problem. In the next section, I use the points discussed to focus the research question for the study.

### 1.3. Refining the question and boundaries of the study

According to the stated justification of the research, the broad research problem for this study is about leadership of innovations in the Health-IT context. The exploratory review of literature (see Chapter 2) indicated a number of reference points defining the boundaries of the study and helped decide the theoretical assumptions of the thesis, as mentioned in the previous section.

For instance, it was understood that the scale and rate of change associated with innovations can limit the scope of the study of innovations. As radical change is considered important in today’s complex environments (Chapman, 2002), it seemed more appropriate for this study to look into an innovation that was intended to bring a large scale/radical change, either in a revolutionary or evolutionary manner (R. Greenwood & Hinings, 1996). There is a need to consider that the unpredictability of the innovation process can prevent planning the change as desired. Therefore, I follow Rost and Smith (1992) who suggested a case can be chosen based on the intention to bring a change.

Another theory that directed my decisions on the research question, was change in organisations. Change is no longer expected to be planned and staged (Lewin, 1947), but rather it emerges from ongoing interactions among people (Tsoukas & Chia, 2002; Weick, 2000). Given that, the rate of occurrence of change in this study is considered as continuous/ongoing as opposed to episodic/discontinuous (Weick & Quinn, 1999).

The next area of interest in the study, leadership of change, also contributed in focusing the research problem. The social view of leadership taken is compatible with the view of change as emergent and ongoing (Tsoukas & Chia, 2002; Uhl-Bien, 2006; Weick, 2000). In fact, acceptance of ongoing change as a result of continuous interactions and sensemaking among members of an organisation, promotes a social constructionist view of leadership. Moreover, the dominance of the traditional view of leadership (Hosking et al., 1995; Uhl-Bien, 2006) in previous HIT innovation studies, supported the need for a theory of leadership of HIT innovations that takes a relational view of leadership. To explore
this perspective, I focused on “patterns of behaviour” among people who interacted and contributed most in the direction of the innovation, rather than their individual characteristics. Unlike explanatory studies that aim to draw a hypothesis about relationships between variables, the purpose of this study of leadership and innovation processes is to explore variables from a relational perspective, using an interpretive account (Perry, 1998).

Accordingly, the research question developed, based on the gap identified in the research literature, to direct the gathering of data for the study (Perry, 1998) is:

- How do patterns of behaviour in leadership and development of large scale innovations in a health IT context affect each other?

To address the question more specifically, the objectives of the study are defined based on the theory building process, as below:

- What categories can be found in data about social processes of leadership and innovation development in the Health-IT context?
- How are these categories connected on an abstract level?

In the following section, the context of the study and the Health-IT innovation selected for the data collection strategy (Eisenhardt, 1989) are introduced (see Chapter 3 for more details on the reason for choosing the case).

1.4. Context (NZ health system)

New Zealand’s population is 4.5 million people (Statistics New Zealand, 2015). Total health expenses in 2008 were 9.8 percent of GDP, whereas in the US health expenses constitute 16 percent of GDP (Bowden & Coiera, 2013). The New Zealand health system combines public and private services, with roughly 82 percent funded through taxation in 2011 (Bowden & Coiera, 2013; Mossialos et al., 2015). The intention of the Social Security Act 1938 (Ashton, 2005; Pollock, 2012) was to provide free health care for all New Zealanders, nevertheless, co-payment (cost sharing) is required for primary care (Ministry of Health, 2001). In New Zealand cost sharing is combined with capitation (Schoen et al., 2012). Patients’ share of primary care costs has been reduced and effectively controlled to the degree that 61% of people spent $200 or less out of their own pockets in 2009 (Schoen et al., 2010). In New Zealand, similarly to the United Kingdom, Australia, Norway and the Netherlands, people need to go through primary care gateways to be referred to specialists (Schoen et al., 2012). Despite lower
healthcare expenses, New Zealand ranked among three top countries in a 2009 Commonwealth study in terms of quality of care, and provision of patient-centred and coordinated care (Pollock, 2012).

The New Zealand health system has gone through a series of policy reforms (e.g., management, funding) and organisational restructuring during the last two decades (Ashton, Mays, & Devlin, 2005; Starke, 2010; Toth, 2010). After separation and then reintegration of purchasers and providers of health services, more emphasis was put on empowerment of patients and quality of services in 2000s. Twenty one (now 20) District Health Boards (DHBs) were established in 2000 to be responsible for planning, funding and provision of health services in collaboration with (contracting) Primary Health Organisations (PHOs) (Ashton, Cumming, & McLean, 2004; Ministry of Health, 2014). PHOs were made responsible for the health care of their enrolled population using their capitation funds (Cumming, 2011). They are accountable for delivery of the New Zealand Primary Health Care Strategy (NZPHCS) which is aimed at reducing disparities and improving health outcomes (B. Howell, 2005). As a result, the GP subsidy changed from a fee-for-services to funding per capita provided by PHOs (Ashton, 2005; Starke, 2010). Establishing meso-level organisations such as PHOs, has strengthened primary care and supported collaboration between regional care providers (Cumming, 2011). It is seen as an innovative approach to increase IT capacity and redesign primary care (Schoen et al., 2012). Moving toward a capitation funding model at the same time allowed wider engagement in primary care provision and shifted the focus from GPs.

In this structure, private organisations including General Practices, pharmacies, laboratories, Maori and Pacific providers and other non-governmental organisations (NGOs) provide health services under contracts/service agreements with DHBs, or the Ministry of Health (Pollock, 2012). These services can be covered by private medical insurance (K. J. Day & Norris, 2007). There is also a governmental organisation called the Accident Compensation Corporation (ACC) that covers healthcare expenses for injuries and accidents to all New Zealand residents and tourists (Ministry of Health, 2011c). Hence, in addition to taxes, ACC and private health insurers contributed 6% in 2005 (Ashton et al., 2005) of the cost of running the health system (Ministry of Health, 2011c).

Despite all the reforms, there was still lack of attention to new models of service delivery to achieve integration within services (Cumming, 2011). However, there was an agreement on the need to redesign primary care systems to address issues of an aging population and pervasive chronic conditions, through integration of care (Schoen et al., 2012). The New Zealand health system had suffered from “highly fragmented, poorly coordinated services” for a long time (Cumming, 2011, p.1). According to a 2010 report by the Commonwealth Fund, 22% of specialists reported not knowing reasons for referrals/investigations from GPs, and 30% of GPs reported not receiving feedback from
specialist visits (Schoen & Osborn, 2010). This fragmentation was associated with a lack of information sharing and coordination between care providers in different organisations (Cumming, 2011). Integrated care is, therefore, a “smooth and continuous” service delivery that is coordinated across different service providers and feels “seamless” for the users (Cumming, 2011, p. 2).

The New Zealand Health Strategy is intended as a guide for DHBs and PHOs in provision of health services in their areas (Ministry of Health, 2000). It acknowledges the importance and priority of coordination among care providers, from primary through to public health and secondary services (Ministry of Health, 2000, p. 20). The focus of DHBs on integrated care, especially for chronic conditions, has remained throughout the 2000s (Cumming, 2011). The New Zealand Primary Health Care Strategy (NZPHCS), released in 2001, also promoted delivery of high quality care by improving integration of services (Scahill, Harrison, Carswell, & Shaw, 2010). DHBs and PHOs have been required to engage with community providers, such as pharmacies, as part of the primary health care system for that purpose (Scahill et al., 2010).

Around 2009/10 a new purposeful change came about to improve the efficiency and quality of care (Blakely, 2010). One of the targets of this change was improving information technology collaborations (Blakely, 2010). Following on from the New Zealand Health Strategy (2000), a policy booklet called “Better, sooner, more convenient” communicated a new message, promoting innovation (Ministry of Health, 2011a). It outlined goals for enabling communication and information sharing between healthcare settings, and promoting change in governance. Hence, it drew more attention to new service delivery initiatives and arrangements to integrate care (Cumming, 2011; Mossialos et al., 2015). Since then, the health system has attempted to provide health information standards and develop a range of electronic messaging systems including electronic referrals and discharge summaries, and to connect to the Patient Management Systems (PMSs) of GPs (Deloitte, 2015).

Meanwhile, the National Health IT Board (NHITB) was formed in 2009 to realise an eHealth vision, as outlined in its National Health IT Plan (National Health IT Board, 2010, p. 4). The plan was to have a core set of health information available for all New Zealanders by 2014. This target has still to be met due to the complexity of implementation (Mossialos et al., 2015). The NHITB was also tasked with facilitating the integration of information systems, resulting from various Health-IT investments, across different health organisations. The vision was to realise the new concept of patient-centred care that was receiving much attention at the time. The wellbeing and preference of patients were given higher priority (National Health IT Board, 2010). Again the focus was seamless access to all levels of health care through a fully integrated care system (Marinelli-Poole, McGilvray, & Lynes, 2011). Transferring information between health organisations and collecting specific clinical information in
regional data repositories (National Health IT Board, 2010) are examples of foundational work toward this vision. At the same time, the Regional Information Strategy 2010-2020 (RIS 10-20) was being developed for the northern region DHBs and PHOs. It is a 10-year plan to guide regional cooperation and integration to meet the region’s needs (Northern Region DHBs, 2009).

The NHIT Plan introduced a five-year goal of a shared care record, accessible to New Zealanders through regional repositories (National Health IT Board, 2010). Accordingly, the NZ Health System moved through phases of prioritised implementation. In phase 1, the foundation needed to consolidate use of Health-IT capabilities was planned to be in place by 2012. Shared care capabilities, the focus of phase 2, were to be achieved through the provision of historical patient information, care plans, and decision support systems (National Health IT Board, 2010). Care plans, that included the patient’s future plan of action, were the focus of multidisciplinary care for patients with multiple conditions. It is also the focus of the case selected for this study. The case will be discussed in the next section.

The NHIT Plan was also being updated and evolved during this time. The plan in 2010 had been preceded by two other strategies. First a report by the Ministry of Health called Working to Add Value through E-information (WAVE Report), in 2001, and then the Health Information Strategy for New Zealand, in 2005 (Health Information Strategy Steering Committee, 2005). Subsequent updates in November 2013 attempted to reinforce priority programmes and the challenges to be solved (Ministry of Health, 2013). Another update on the progress of the Health-IT initiatives was released in July 2014 (National Health IT Board, 2014b).

A 2012 report on capability for sharing electronic information among primary practices, ranked New Zealand highly among 10 commonwealth countries, reporting an exchange capacity of 55 percent. However, lack of teamwork and coordination is still a big challenge (Schoen et al., 2012). The most recent report on Health IT policy in NZ suggested development of a single Electronic Health Record (EHR) to leverage the benefits of Health-IT applications in the sector (Deloitte, 2015). In this way, health information stored in regional and local repositories would be joined up to form a physical national data repository, to improve integration between primary and secondary care systems and increase productivity (Deloitte, 2015).

In conclusion, an existing climate for innovative solutions in the Health-IT/eHealth field within the New Zealand Heath System provided a promising context for this thesis.
1.4.1. Introducing a national Health-IT programme

In this section, I introduce the Health-IT innovation selected for this study. One of the New Zealand Health-IT initiatives is a programme intended to introduce a change in the model of care for management of chronic conditions. The new model has been labelled shared care and follows the same principles as for the provision of integrated care, discussed in the previous section. Given that, I refer to this programme as the shared care programme throughout the thesis. The programme commenced in May 2010 based on the discussions among clinicians and authorities in three Auckland region DHBs. The three DHBs, which cover a population of over 1,500,000 people, participated in the initial sponsorship of the programme, collaborating with the NHITB to begin the initiative (Ministry of Health, 2015). The aim was to facilitate provision of shared health information for all New Zealanders, as stated in the NHIT Plan, and improve patient engagement in their own healthcare (Warren, Humphrey, & Gu, 2011).

The innovative idea behind this programme is rooted in Wagner’s (Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004; Wagner, Austin, & Von Korff, 1996) model of care for management of chronic conditions, which proposed the benefits to patients with chronic conditions of integrating services and allowing more self-management (Epping-Jordan et al., 2004). Wagner’s Chronic Care Model (CCM) also promoted productive interactions between patients and healthcare providers, decision support for clinicians, and clinical information systems to provide access to real-time data (Epping-Jordan et al., 2004; Safari Mehr, Day, & Carswell, 2013, September). The interactions and shared management of patients will improve outcomes across a number of domains (Wagner et al., 1996).

The shared care programme took the core constructs of CCM in proposing an abstract idea of the Health-IT innovation. The innovation did not introduce a pre-developed IS, but called for a collaborative approach to developing, implementing and testing the new idea and its basic IT tool (Safari Mehr et al., 2013, September). The abstract idea of the innovation was to provide a platform for communication and collaboration between primary, secondary and community care providers, together with patients and their families; and to empower patients through access to more information and having more control over self-management of their health issues (Safari Mehr, Day, & Carswell, 2014, November; Warren et al., 2011). The communication platform proposed was missing in existing programmes that targeted productive interactions, including Care Plus and the Flinders programme (Ministry of Health, 2012; Rodenburg, Dryden, & Rodrigo, 2007).

In order to provide the basic IT tool and find an IT vendor capable of developing it, NHITB followed a new approach called Active Procurement (AP), developed by the National Institute for Health Innovation (NIHI) at the University of Auckland (Pollock, Warren, & Gu, 2011, November). The AP
approach applies in an innovation process where the customer (i.e., the programme) has a high level concept and vision but the detailed requirements are still underdeveloped. The use of AP enables a responsive vendor selection process, where the vendors actively contribute their thinking and answers to the solutions being sought (Pollock et al., 2011, November). Accordingly, this approach is a first step to fleshing out the details and elements that will form the initial view of the desired solution. From this point forward, the iterative process of design, development, testing, and deployment starts with experts, users and, vendors working together.

In the innovation process, the programme owners decided to include volunteer participants from clinical and administrative staff and patients to collaborate in “co-construction” of the new model of care. Inherent in this approach is what Washbush (2002) describes as taking a broad whole of system view, in which various organisational entities or groups of stakeholders (even customers) need to not only view the desired outcome, but also be on the inside so as to be part of the outcome solution thinking. This characteristic of the programme, and the presence of a central governance and leadership structure, made the approach taken in this initiative distinctive in terms of implementation of change in the health system.

The shared care programme is a multi-organisational programme where the three DHBs of the Auckland region (Auckland, Counties Manukau, and Waitemata), one PHO, one general practice and one secondary care service were involved the test phase. Gradually, more care providers/organisations joined them to participate as thinkers, solution contributors and users. A high level governance group was established by the NHITB, included representatives from different stakeholders of the programme. One of the other organisations involved with this initiative was a company responsible for management of the programme and its IT tool development. This managing company was owned by the Northern Region DHBs (including the three DHBs involved) and a state organisation (Health Benefits), and had the initial commission to provide shared services for non-core business processes to reduce non-clinical costs across the region (Safari Mehr et al., 2013, September).

In summary, the shared care programme was working on the provision of real-time and relevant information and a platform for effective communication between all care providers involved with the care of a patient and with the patient themselves, to facilitate timely decision making, improved health outcomes, system efficiencies, and resource maximisation. In Chapter 3, the reasons why this programme was selected to be studied, and how it was used, will be outlined.
1.5. Conclusion and structure of the thesis

This chapter introduced the problem, justified the rationale behind this problem and described how it was narrowed down to the research question. It also briefly introduced the context of the study and the Health-IT innovation selected for data collection.

This thesis is structured in the following way. Moving from the introduction in Chapter 1, Chapter 2 presents an exploratory review of literature. The research strategy and methods are addressed in Chapter 3, following by the findings presented in Chapters 4, 5, 6, and 7 in a processual order to elaborate how theory was built in this journey. Theory building is covered in Chapter 8 following by Chapter 9, the conclusion. Table 1-1 summarises the structure in more detail.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>Introducing the thesis</td>
<td>Introduces the research problem, how the research question was derived, and the context of the study. As part of the context, the New Zealand health system and the case selected as one of its Health-IT innovations are introduced.</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Exploratory review of literature</td>
<td>Provides a limited review of background theories and elaborates the gap identified in the literature. This exploratory review builds a general understanding of the problem and allows the researcher to be reflexive about theoretical assumptions of the study before embarking on the enquiry.</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Research strategy and methods</td>
<td>Describes theoretical assumptions, methodology (Grounded Theory), and methods of data collection and analysis.</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Getting to know the shared care programme</td>
<td>This chapter is the first stage of data collection and analysis performed by observation. It provides the baseline understanding of the context of the study in the selected Health-IT innovation in New Zealand. Observations helped me, as a newcomer, understand meanings of interactions and members’ shared language from the inside. It also provided probing questions for theoretical sampling in this Grounded Theory study.</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>Beneath the written messages</td>
<td>The next data collection source was documents of the Health-IT initiative. In this chapter, the meanings behind communications are described that are key to understanding leadership behaviour. The analytical approach in this stage is content analysis of the text that helps making inferences based on the context of the study. The findings also guided the next theoretical samplings.</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>Innovating as you go</td>
<td>Represents findings from the first set of interviews (convergent interviews) that was conducted to understand main issues, events and characteristics of the innovation development process. An adaptation of the convergent interviewing technique allowed a quick interview process and of key informants to find convergence on the main issues of the innovation. The understanding and findings provided probing questions and insight required for the next set of interviews about leadership process.</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>Identifying the core category of the theory</td>
<td>Provides the last set of data collection and analysis in this Grounded Theory study, that is in-depth interviews focused on leadership process. It also integrates all the findings from previous stages and analyses data overall to the most abstract level, until the core category and its properties emerge.</td>
</tr>
<tr>
<td>Chapter 8</td>
<td>Theory building</td>
<td>Indicates how subcategories within the core category are related and describes how the theory has emerged. The theory is then elaborated in words and in a visual diagram to facilitate understanding of the connections between categories. The main findings emerged are also compared with existing literature to indicate how the theory confirms, contradicts, or extends the literature.</td>
</tr>
<tr>
<td>Chapter 9</td>
<td>Conclusion</td>
<td></td>
</tr>
</tbody>
</table>
Concludes the study by evaluating the study, summarising final findings, and clarifying the research contribution, its practical implications, and limitations.

**Appendices**

| Provides an outline of the topics of enquiry during the interviews and the findings presented to the interviewees. |
CHAPTER 2. Exploratory review of literature

2.1. Introduction

This chapter describes the result of an exploratory review of literature in the areas of interest to this study: organisational change, leadership, and HIT innovations. In the next section, I describe the trends in change literature and their main assumptions about the nature of change and organisations. Following that, I present the existing literature on leadership of change in organisations, focusing on their theoretical assumptions rather than models and styles of leadership. Furthermore, I elaborate on the lens I have selected for my research on leadership in reference to the existing literature. The next section presents my exploration of the Health-IT innovation literature and my position regarding the existing definitions of innovation. After these separate explorations in the areas of interest, I expand on the gap found existing at the intersections of these three areas to reinforce the value of doing this research.

The benefits of conducting an exploratory literature review at this stage, included: 1) providing basic understanding of research fields that are new to me and to help me find my way in the study (i.e., leadership and organisational change); 2) to confirm that the research problem merits an interpretive study; 3) exploring the existing schools of thought and background theories of the research discipline in order to define my position for the study (including assumptions), and help draw boundaries for the research (i.e., focus the problem to a more defined research question); and 4) to prepare academic evidence required for the research proposal and to convince the university ethics committee I had enough knowledge to conduct the study (McCallin, 2003). In summary, the main reasons for conducting this exploratory review were to familiarise myself with the relevant literature as a newcomer to the area, to focus the broad research problem in to a research question, to provide justification for the value of the study, and for clarification of the theoretical assumptions.

It is also important to clarify the methodological justification for reviewing literature for this study. The value of reading literature at the outset of a study is hotly debated among originators of Grounded Theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990), the primary methodology chosen for this research (McCallin, 2003). Glaser believes that an extensive literature review conflicts with the main purpose of GT; that is to allow theory to emerge from the data (Glaser & Holton, 2004). Following Glaser’s approach requires avoiding becoming submerged in an extensive literature (Glaser & Holton, 2004) to prevent pre-conceptualisation based on extant theory that may impose variables in to the conceptualisation of data (Bringer, Johnston, & Brackenridge, 2004; Glaser, 1992; Glaser & Holton,
2004). However, not doing a substantive literature review does not mean having an “empty head” on entering the field: “there is a difference between an open mind and an empty head” (Dey, 1993, p. 63). The researcher needs to gain a general understanding of the problem area and be sensitised to the wide range of possibilities (Heath & Cowley, 2004). As Charmaz (2002) explains, attending to the literature also aids being reflexive about preconceptions and assumptions before the enquiry. However, as Glaser stresses, the constructs found in the literature should not be forced on to the analysis of data (Glaser & Holton, 2004). Literature is there to be used after development of core categories, as a source of “constant comparative analysis” in an effective and focused way (Glaser & Holton, 2004, p. 9; Heath & Cowley, 2004).

Given that, I explored each area of interest to reach a basic understanding of trends in the organisational change and leadership research (as a newcomer) and to not be “an empty head”, as suggested by followers of GT (Dey, 1993; Heath & Cowley, 2004). Furthermore, I used the review to find my position on the theoretical assumptions of the study, and focus the research problem through the selected lens. This is also compatible with approaches to GT research, as clarified by Charmaz (2002). Finally, I identified a gap in the literature at the point of overlap between the three notions of interest. The dearth of research at this overlap, justified the merit of conducting an inductive interpretive study using GT to identify the issues and patterns of behaviour in this area. The final point to clarify is how I worked to prevent what Glaser (1992) described as pre-conceptualisation and imposing variables in to the research. In fact, in reviewing the literature I did not focus on theories and models of leadership or change. Instead I explored their background assumptions, trends, and definitions of main concepts. Moreover, I did not apply any frameworks from these theories to the data collection and did not use the existing concepts in my enquiries (i.e., interview questions), or in my analysis (i.e., coding the data with the best analytical codes I could interpret, rather than based on concepts from the literature). Finally, the chosen body of literature was only explored to identify the gap within which to place the study (as described at the end of this chapter). The literature will be reviewed in Chapter 8 after emergence of the theory, as suggested by Glaser and Holton (2004), to examine how the construct/s that emerged confirms/extends/contrasts the literature (Urquhart, 2013).

In the following sections, a limited review of background theories to this research will be summarised (mostly from their theoretical perspectives and the existing trends) in the three areas of interest that overlap in this study: behavioural and organisational change, leadership, and innovation in Health-IT context.
2.2. Behavioural and Organisational change

Innovation in organisations is coupled with change which moves in both directions (Baregheh et al., 2009). Organisations develop or implement an innovation in response to a change in their environment, or to influence their environment by introducing a change (Damanpour, 1991). A prominent existing theory about innovation is Roger’s “Diffusion of Innovation”, considered a foundation for the study of behavioural change in the social sciences (Valente & Rogers, 1995). Innovation dissemination is considered a change process that is affected by the perceptions and characteristics of its adopters and leadership/management of the change (Berwick, 2003).

Studies focused on organisational innovation (Damanpour, 1991; Kim, 1980; Kimberly, 1986; Van de Ven, 1986) tend to have different assumptions or paradigms regarding the reality of organisations. A paradigm, as defined by Kuhn (1996) (original work published 1962), is a conceptual framework that scientists commit to as a foundation for their research. Morgan (1980) elaborates that Kuhn used the notion of paradigm in different ways, including as 1) a world view of reality, 2) a school of thought in social science, and 3) a way of using tools to answer research questions in what he considered to be “normal science” (Kuhn, 1996). According to Morgan (1980), the dominant organisation theory can be categorised as a functionalist paradigm in which the language and metaphors used indicate the assumption that organisations are objective realities, and society, by its nature, is oriented toward regulation and order. This perspective has been criticised by proponents of the interpretive paradigm. They argue that the reality of organisations is the outcome of subjective relationships between individuals and can be understood by unravelling how shared realities are reached among them (Morgan, 1980). The interpretive and functionalist approaches, however, are similar in their view of the existence of patterns of social order.

Socio-technical System (STS) theory is an example of a functionalist paradigm (Trist & Bamforth, 1951). According to STS theory, “an organization or a work unit is a combination of social and technical parts and that it is open to its environment” (Appelbaum, 1997). Thus, organisations exist as objective structures that include people. This ontological view of organisations can be seen in Taylor’s (1993) statement: “It conceptualized the organization as constructed from the outside, by a managerial corps, much in the way a computer program is written by a computer programmer, rather than an entity that builds itself up from the inside” (p. 241). There are other research streams within the new interpretive paradigm (Morgan, 1980), that focus on organisational documents and interpretations (Ricoeur, 1971), or on the language game played by its members (Wittgenstein, 2010).
It can be said that traditional views about organisational change have overemphasised the stability of organisations, and regaining of order after implementation of change (Tsoukas & Chia, 2002). Proponents of this view consider change as a planned event (Bullock & Batten, 1985; Burnes, 2004b; Lewin, 1947) that is applied by managerial forces using rewards and punishments (Tsoukas, 2005). Studies following this planned approach to change, dominated the organisational change literature from the 1950s to the early 80s (Burnes, 2005). This behaviourist perspective of change is rooted in Kurt Lewin’s description of change stages, as unfreezing, changing, and refreezing (Lewin, 1947). The following quote by Tsoukas (2005, p. 97) describes the dominant planned perspective of organisations: “it sees organizations being populated by individuals, structures, systems and processes, which can be objectively described and deliberately altered”. As can be seen, the dominant perspective is similar to the functionalist view (Morgan, 1980), that considers organisations as objective realities.

The idea behind this model is Lewin’s theory about the existence of periods of relative balance in human social life, which can become unbalanced by forces in the field or its environment. It is called “quasi-stationary equilibrium” (Elrod & Tippett, 2002). Hence, proponents of this idea attempt to face change in the hope of reaching another stable state (Armenakis & Bedeian, 1999; Elrod & Tippett, 2002). Followers of Lewin’s 3-step model of change include Kubler-Ross (1969), Adams (1969), and Rashford and Coghlan (1989). Other theorists, following the same principle, have provided guidelines for change management (e.g., Parlalis (2011), Kotter (1995), and Galpin (1996)).

Another perspective on change is described as the emergent approach (Weick, 2000). Weick (2000) describes emergent change as ongoing responses and adaptations of actors without a priori intention. These alterations can produce fundamental change. Opponents of the planned approach argue that organisations are “fluid entities”, rather than being in any of Lewin’s three change stages (Burnes, 2005, p. 72; Kanter, Stein, & Jick, 1992). The basic idea in this view of change is that “small continuous adjustments, created simultaneously across units, can cumulate and create substantial change” (Weick & Quinn, 1999, p. 375). Therefore, there is an emphasis on everyday changes across organisations, happening as a result of people’s interactions and adjustments, that could be overlooked by the planned approach.

This view also is supported by the need for rapid transformations in organisations (Burnes, 2005). Proponents of emergent, bottom-up approaches to managing change argue in terms of the uncertainty and unpredictability of the environment, or dynamicity of context (Bamford & Daniel, 2005; R. Greenwood & Hinings, 1996; Todnem By, 2005). This perspective sees organisational life in change rather than stability, and seems more applicable in today’s society (Orlikowski, 1996). Tsoukas and Chia (2002) have followed pioneers in this new perspective and added some clarifications. For
instance, they include Orlikowski's (1996) concept of “ongoing improvisation”, Weick and Quinn’s (1999) reference to changing organisational life and Feldman’s (2000, p. 611) “performative model of organisational routines”. They then elaborate by describing a new ontological stance on change and organisations, which views change as an ongoing process inherent in human behaviour (Tsoukas & Chia, 2002). Organisation is the next ontological priority, that is, an effort to bring order to this flux of actions. It is both socially-set rules and the emerging patterns for applying these rules (Tsoukas & Chia, 2002).

Thus, they indicate their process-oriented perspective of change in organisations (Johansson & Heide, 2008) with language such as “organizational becoming”, that is rooted in thinking of organising rather than organisation (Tsoukas & Chia, 2002, p. 570). Tsoukas and Chia (2002), following Weick’s (1979) conceptualisation of organising, explain this interpretive perspective of organisations by focusing on how recurring behaviour can happen. They seek to identify the types of behaviours and situations connected to the types of actor. In fact, organising is about what activities should be carried out by specific actors in each situation (Tsoukas & Chia, 2002). Therefore, this view proposes looking into how people sense-make and perform micro-level changes over time (Weick & Quinn, 1999). While the traditional view sees organisational change from the outside to identify its patterns at each timeframe, the new interpretive perspective of organisations looks inside for sources or human agents of emergent change (Tsoukas & Chia, 2002). Table 2-1 summarises these two main theories of change with examples of followers of each group. As can be seen, the emergent view has attracted more attention since the 1990s, as researchers started looking at organisations from a subjective, interpretive stance.

Dawson (1994), one of the popular followers of the emergent approach to managing change, developed a processual approach. This approach is based on analysis of political behaviour in change management that is less dependent on the role of managers (Bamford & Daniel, 2005; Burnes, 2005). Pettigrew (1973; 1979) is another processual theorist who has criticised the prescriptive nature of the planned approach, focusing instead on inter-relationships between individuals, and the influence of culture, power and politics in change (Burnes, 2004b).

It is interesting to note that Kotter (2015) recently reviewed his original eight-step model for leading change (Kotter, 1995), which was dominated by properties of planned approach, and added elements of emergent change to it. In the revision, he explains that start-up businesses have recognised the need for agile strategies rather than efficiency, as was formerly the case (Kotter, 2012). Hence, there should be a concurrent process for strategy revision, alongside the eight steps, that continuously seeks opportunities, defines new initiatives and accomplishes them quickly (Kotter, 2012; LeStage, 2015).
The new operation should be performed by a group of volunteers in a network across the organisation (Kotter, 2012). Bottom-up, continuous change is the main theme behind this new aspect of the Kotter’s model, that seeks to complement the previous hierarchical process.

Table 2-1: Theories of change with example followers

<table>
<thead>
<tr>
<th>Theory of change</th>
<th>Followers (authors)</th>
<th>Year of publication</th>
<th>View about change</th>
<th>View about organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned models</td>
<td>Lewin</td>
<td>1947</td>
<td>Slow &amp; consensual change, relatively balanced with occasional unbalanced states (infrequent &amp; episodic), Top-down (intentional)</td>
<td>Stable, objective view of organisations</td>
</tr>
<tr>
<td></td>
<td>Kobler-Ross</td>
<td>1969</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adams</td>
<td>1969</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bullock and Batten</td>
<td>1985</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rashford and Coghlan</td>
<td>1989</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Schein</td>
<td>1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kotter</td>
<td>1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergent (bottom-up) change</td>
<td>Pettigrew</td>
<td>1973,79</td>
<td>Ongoing change, No a priori intention, Open-ended cumulative</td>
<td>Not stable (fluid), Process-oriented, Interpretive view</td>
</tr>
<tr>
<td></td>
<td>Kanter et al.</td>
<td>1992</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dawson</td>
<td>1994</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orlikowski</td>
<td>1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weick and Quinn</td>
<td>1999</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weick</td>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tsoukas and Chia</td>
<td>2002</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Luecke</td>
<td>2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Luecke</td>
<td>2003</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Planned approaches or stage models of change (Schein, 1996) have been criticised by supporters of ongoing change. These stage models have considered change as externally driven (from the top), and sought to describe stages that individuals or groups within organisations must go through to reach the desired state (Hallencreutz & Turner, 2011; Schein, 1996). For instance, leaders need to scan the environment to know what changes should be applied (Shirey, 2011). They also create a sense of urgency for change (Kotter, 2007; Shirey, 2011). There are guidelines or general rules designed for managers’ behaviour, including their leadership responsibilities (Bullock & Batten, 1985; T. G. Cummings & Huse, 1989; Kanter et al., 1992; Kotter, 1995; Luecke, 2003). Leadership is seen as providing vision, trust, stability and security, support, critical decision making and reducing uncertainty (Battilana, Gilmartin, Sengul, Pache, & Alexander, 2010; Elrod & Tippet, 2002; Gill, 2003; Golden, 2006; Kirsch, Chelliah, & Parry, 2011). Hence, leaders are supposed to understand change, reduce resistance to it (Elrod & Tippett, 2002), and provide stability and security by planning stepping-stones for the journey that seem achievable. In summary, in traditional stage/episodic models of organisational change, leadership is considered as directing and controlling the change in organisations toward a known future state (Plowman et al., 2007).
In the emergent perspective, change is seen as pervasive and open-ended (Tsoukas & Chia, 2002). It can happen without managers’ intention and as a result of individuals’ new experiences. Weick and Quinn (1999) wrote that proponents of the planned approach tend to see periods of routine actions, and some revolutionary changes, and are focused on the macro level of analysis. The emergent approach on the other hand looks at micro level, claiming that ongoing adjustments, happening continuously and incrementally, can change organisations on a large scale. In that case, the role of managers is in recognising the change and trying to channel it into a desired pattern (Tsoukas & Chia, 2002). Thus the organisation is not seen as an entity, but as a pattern created in the actions of individuals and their decisions in their interactions. In regard to resistance, they do not see it as a barrier to be overcome by leaders/managers, but something that happens as a result of background conversations (J. D. Ford et al., 2002). Thus, these conversations need to be influenced and altered through communication. Storytelling is one of the communication methods suggested to influence the sensemaking process of group members (Gioia & Chittipeddi, 1991).

Moreover, a bottom-up change can be very rapid and complex and may not be identified and planned. Thus the roles of managers alter from controllers to facilitators (Bamford & Daniel, 2005), as they link actions of people in all levels of organisation (Bamford & Daniel, 2005). Leaders identify new pathways but are not aware of the future state. The vision needs to be created and the movements need to be coordinated around the goals (Chapman, 2002). In order to improve willingness to change among members, change agents need to empower and encourage people to see the purpose and benefits of change (Chapman, 2002).

The literature reviewed in this section indicates two main views of organisational change, planned and emergent, and associated views on the role of leaders (controllers vs facilitators). Furthermore, there are assumptions about the nature of change, in terms of its rate of occurrence and scale, which are summarised in the following section. Developing this understanding helped in the selection of a change initiative for the study.

2.2.1. Nature of change (rate and scale)

Studies of organisational change have also discussed perspectives of the nature of change (rate and scale of change). One of the main assumptions concerns the rate of occurrence of change (Todnem By, 2005). In the planned approach, the nature of change is considered slow and consensual (Burnes, 2005). Followers of Lewin’s three stages of change view change as a framed event, or see it as “episodic change” that is infrequent, discontinuous and intentional (Weick & Quinn, 1999). Advocates of discontinuous change (Guimaraes & Armstrong, 1998) support a one-time event of large scale
change that is followed by long periods of steady states (Luecke, 2003). They believe it is more cost-effective to introduce a short term change than a continuous one (Todnem By, 2005).

In describing the emergent approach to change, Weick and Quinn (1999) distinguish between a discontinuous rate of change and a continuous one. They seem to use the word incremental synonymously with continuous, ongoing change. However, others such as Burnes (2004a; 2005) define incremental change as the dominant framing until the 1980s, according to which change was seen as separate and incremental processes in each part of organisations. This definition can be seen as closer to episodic or discontinuous change.

The next popular theory regarding rate/pace of change is “punctuated equilibrium”, proposed by Romanelli and Tushman (1994). Proponents of this model describe organisational life as long periods of stability punctuated by rapid and large scale (fundamental) change (Gersick, 1991; Romanelli & Tushman, 1994). Gersick (1991) compares this theory with Kuhn’s theory of science, that explains how “normal science” is punctuated by scientific revolutions that bring paradigm shifts. He uses a system view to explore the similarities of these theories (p. 13):

“Systems evolve through the alternation of periods of equilibrium, in which persistent underlying structures permit only incremental change, and periods of revolution, in which these underlying structures are fundamentally altered.”

This system view can be seen as reflecting a functionalist view of organisational change in these studies, that in turn relates to an objectivist view of organisations. Furthermore, punctuating equilibrium is a concept compatible with the planned or stage model of change as it is seen as disrupting stability with an intended change (Weick & Quinn, 1999).

Scale of change has sometimes been discussed in literature in combination with rate of change. Fine-tuning (Dunphy & Stace, 1993), or convergent change (Tushman, Newman, & Romanelli, 1986), is the lowest scale of change and describes adjustments of people to current strategies, or refinement of procedures and methods (Dunphy & Stace, 1993). The purpose is to maintain the existing equilibrium (Nelson, 2003). Next, is incremental adjustment that has been interpreted as small scale change (I. Smith, 2011; Todnem By, 2005). It is defined as “distinct modifications to management processes and organisational strategies”, a scale of change that is still some way away from major transformation (Todnem By, 2005, p. 377). There are references to incremental change that seem to describe both small scale and gradual change (Gersick, 1991; Pettigrew, 1987). It is considered as refinements that happen over the existing structures for a long time which cannot result in a fundamental/transformational change unless a revolutionary interruption punctuates the equilibrium (Gersick, 1991).
The next theory considered important for organisational survival in today’s complex environments is transformational change (Burnes, 2004b; Chapman, 2002; Dunphy & Stace, 1993; Goes, Friedman, Seifert, & Buffa, 2000; Golembiewski, 1979). Its proponents argue that Lewin’s model is not able to describe transformational/radical change (Dawson, 1994; Pettigrew, 1990). Some authors have interpreted transformational change as change in ideology, power relations and meanings (Chapman, 2002; McNulty & Ferlie, 2004; Pettigrew, 1987), and some as a reframing of structure and practice (R. Greenwood & Hinings, 1996). The point made by Greenwood & Hinings is that a radical change might be either evolutionary (gradual and slow) or revolutionary (large scale and quick), in terms of both scale and rate of change. For instance, Pettigrew (1987) explains how strategic changes in culture and ideology can take a long time, occurring in an evolutionary fashion as a new pattern of relationships is established. Punctuated equilibrium (Romanelli & Tushman, 1994), on the other hand, is a form of revolutionary change. Heeks’ (2006) description of a big bang change, brought about by introducing a new IS in a revolutionary way, can be seen as another example of radical and revolutionary change. Orlikowski (1996) also indicates an evolutionary stance in describing radical change that can be a result of everyday accommodations (i.e., slow and smooth but radical). It can be inferred that transformational change incorporates both the planned and emergent views. It can happen through punctuating the equilibrium (i.e., compatible with the planned view), or by gradual accumulation of everyday changes (i.e., in an emergent manner).

Brown and Eisenhardt (1997), however, present another type of change that is neither incremental, nor a breakthrough (radical). Their observation about continuously changing companies that have changed rapidly and sometimes transformed themselves, highlights a continuous change model that occurs on a lower scale than a radical change. Similarly, Weick and Quinn (1999) state that continuous adjustments in organisations may end up as transformational change. Table 2-2 summarises the theories discussed on scale of change and also indicates their implied meaning for rate of change. Interestingly, it can be seen that among the definitions of the scale of change, the continuous model was the last one to appear in the literature, similarly to the emergent change view.

<table>
<thead>
<tr>
<th>Scale of change (ordered)</th>
<th>Rate of change</th>
<th>Exemplar theorists/year of publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine-tuning</td>
<td>-</td>
<td>Tushman, et al., 86; Dunphy &amp; Stace, 93</td>
</tr>
<tr>
<td>Incremental adjustment</td>
<td>Gradual (long-term)</td>
<td>Pettigrew, 87; Gersick, 91</td>
</tr>
<tr>
<td>Continuous</td>
<td>Rapid change</td>
<td>Brown and Eisenhardt, 97; Weick and Quinn, 99</td>
</tr>
<tr>
<td>Radical</td>
<td>Either gradual or rapid</td>
<td>Golembiewski, 79; Pettigrew, 87; Goes et al., 2000</td>
</tr>
</tbody>
</table>
In the following section, I summarise the literature explored around leadership, the next area of interest in the study. Leadership has an unclear terminology (Hosking, 1988), with different trends and schools of thoughts found in the literature. The limited literature reviewed allowed me to recognise these trends and then choose my viewpoint in studying leadership.

2.3. Leadership (existing assumptions and selected lens)

Leadership is the second area of interest in the study. The leadership literature was explored mostly to identify theoretical assumptions and views about leadership of change. The existing assumptions and the selected lens for the study are presented, as follows:

2.3.1. Existing assumptions

The history of studies on leadership goes back to the 1930s (Alimo-Metcalfe & Alban-Metcalfe, 2005). As Rost and Smith (1992) describe, in the industrial era (20th century) leadership studies were concerned with group facilitation, traits and behaviour of leaders, and excellence of organisations. Hence, their perspective of leadership was primarily focused on individual leaders (Avolio et al., 2009; Shamir et al., 2005), and the qualities needed to influence the group or organisation’s members. Leaders’ traits and behaviour were central to these studies (B. M. Bass & Avolio, 1990; R. Bass & Bass, 2008; Hollander, 1985; Stogdill, 1948). For instance, Kouzes and Posner saw leadership as a process in which “leaders mobilize others to get extraordinary things done” (2003, p. 14). There was an individualistic view (Uhl-Bien, 2006) in how practices of successful leaders were defined (J. M. Kouzes & Posner, 2003). As Burns (1978) states, much was known about leaders but less about the phenomenon of leadership. The other focus of these studies was situational factors that affect leaders’ behaviour and traits (i.e., situational theories) (B. M. Bass, 1990; Larsson & Vinberg, 2010; Van Vugt, 2006; Yukl, 1989).

Rost and Smith (1992) propose a post-industrial paradigm that is still individualistic because leadership is seen as the relationship between leaders and followers, and the way they influence each other: “Leadership is an influence relationship among leaders and followers who intend real changes that reflect the purposes mutually held by both leaders and followers.” (p. 198). It is also interesting that they are promoting a planned approach in which leaders and followers should draw the outline of the change.

Uhl-Bien (2006) and Hosking et al. (1995) label this individualistic view of leadership as “entity” or “entititative”. The focus is on personalities and behaviours of people, and there is an objective view of reality. Leader-member exchange theory (LMX) is one example of the entity perspective. It is
dependent on what individuals bring to their dyadic transaction and what they expect (Uhl-Bien & Ospina, 2012; Uhl-Bien, 2006). Charismatic/transformational leadership is another example (Uhl-Bien & Ospina, 2012) that comes from a group of studies investigating power or influence rooted in personal expertise, charismatic power, and strong relationships with people (Stone, Russell, & Patterson, 2003; Yukl, 1989). A transformational leader inspires followers to go beyond their immediate interests, considers followers’ development, and supports their innovative ideas (B. M. Bass, 1985; B. M. Bass, 1999; J. M. Burns, 1978). It draws attention away from the exchange between leaders and followers to vision, values and empowerment of followers (Malloch, 2014).

Transformational leadership is designed based on four pillars: the leader’s attributed and behavioural charisma; creating high values and expectations; challenging followers’ creativity; and providing support, care and respect for individuals (B. M. Bass, 1999; Turner & Muller, 2005). This is the most researched theory of leadership (Uhl-Bien, Riggio, Lowe, & Carsten, 2014). This leader-centric view of followers sees followers as “recipients or moderators of leaders’ influence” (Uhl-Bien et al., 2014). Although it pays attention to followers’ needs, it still focuses on how leaders can obtain followers’ commitment to achieve organisational goals (Uhl-Bien et al., 2014).

The next trend identified is to set leadership within organisational processes, in which organising activities are negotiating the new social order (Hosking, 1988). It is no longer viewed as “what leaders do” (Hosking, 1988). It is rooted in the emergent approaches to change that support continuous/ongoing change that happens through communications (Burnes, 2004a; J. D. Ford et al., 2002; Johansson & Heide, 2008; Orlikowski, 1996; Tsoukas & Chia, 2002; Weick & Quinn, 1999). Therefore, Hosking promotes theorising leadership and organisation (as a verb) together, and associates skills of leadership with organising skills. In this vein, leadership studies tend to promote the view of leadership as a process of interactions between leaders and followers (Northouse, 2009; Uhl-Bien et al., 2014). For instance, Hollander and Julian (1969) define leadership as an influence process between people to attain mutual goals.

Seeing leadership as an organising and structuring activity, allows researchers to theorise leadership with a broader lens. Uhl-Bien’s (2006) Relational Theory of Leadership (RTL) promotes studying leadership as a process (rather than proposing how to do it), from a social construction perspective. Leadership is described as “a social influence process through which emergent coordination (e.g., evolving social order) and change (e.g., new approaches, values, attitudes, behaviors, ideologies) are constructed and produced” (Uhl-Bien, 2006, p. 654). This view is a shift away from seeing leadership as an individual practice, to it being about local processes (Hosking et al., 1995). Reality and the way
we look into it is then “a matter of how we do our lives” and is based in local-cultural-historical processes that constitute our social construction (Hosking, 2006).

This perspective is interesting for the development of the thesis, as it is compatible with the emergent view of change in organisations. It allows a new way to look into the actions of people and their sense making through an innovation development approach, where change is an ongoing part of the process. In the following section, I explain the social/relational perspective on leadership studies in more depth, to help clarify the lens selected for this study.

2.3.2. Selected lens

The underlying assumptions of relational or social perspectives about leadership were selected for this study of the leadership process. Relation is “an aspect or quality (as resemblance) that connects two or more things or parts as being or belonging or working” (Uhl-Bien & Ospina, 2012, p. xix). I adopted RTL in following the social/relational approach in this study. However, this did not impose any theories into my interpretation of data. Relationality in leadership added the invisible connections between people involved in the leadership process into the reality under the study (Uhl-Bien & Ospina, 2012)(Ospina, Uhl, 2012). In fact, having a social/relational perspective and avoiding a focus on individuals in studying leadership provided a lens with which to draw boundaries around this area of interest in data gathering. It should be emphasised that relational theory of leadership is not considered as an approach to lead, but explains the philosophical perspective behind the definition of leadership used in this study. In the following section I review studies claiming a social perspective of leadership, and mostly using the term relational, to clarify their nuances and my stance in this study.

As Uhl-Bien and Ospina (2012) demonstrate in their book, “Advancing Relational Leadership Research: A Dialogue Among Perspectives”, scholars who have conducted relational leadership research have also used different ontological and epistemological assumptions that might not be clear to researchers from other paradigms. One group of scholars follow an entity perspective in looking at interpersonal relationships with others falling somewhere between the entity perspective and, at the other end of the spectrum, the constructionist perspective. Followers of the constructionist view, privilege collective acts (Uhl-Bien & Ospina, 2012) and describe leadership as a social construction (Cunliffe & Eriksen, 2011; Fairhurst & Uhl-Bien, 2012; Hosking, 2006; Meindl, 1995). Constructionism is a version of interpretivism and can be found in the postmodernist school (Uhl-Bien & Ospina, 2012). The entity perspective has been seen as dominant, however, the discussion and conversations between these two have been started to develop interplay between paradigms and resulting development in the constructionist approach (Uhl-Bien & Ospina, 2012).
The nuances of the term relational in the existing literature can be vague or confusing. For example, some focus on the role of followers and their behaviour, and perspectives on leaders (J. M. Howell & Shamir, 2005; Lord, Brown, & Freiberg, 1999; Meindl, 1995; J. C. Rost, 1991) are still restricted to an understanding of individuals in relationships. Graen and Uhl-Bien (1995) describe them as relationship-based views of leadership. Meindl (1995) believes in the emergence of leadership in the interaction between two groups/individuals, an indication of a relational perspective. However, he still suggests individuals as the first point of understanding, not the process itself.

Another group of researchers have adopted a situational or context-oriented approach (Conger, 2004; Pettigrew, 1987; Yukl, 1999) and have highlighted the effect of culture/situations on effectiveness of leadership styles. Yukl (1999) proposes a shared process in which different people might perform leadership at different times. His point is to consider different inter-related influence processes that collectively apply to leadership. However, as mentioned earlier, the emphasis is on adding followers’ influence and situational variables into this reciprocal process. Stogdill (1974) also followed a similar situational perspective. The aim of situational or contingency models seems to be to better explain what can affect individual behaviour and how leaders adapt their behaviour in response to those factors (still a relationship-based/entity view).

Avolio (2007) can be seen as another proponent of situations/contextual factors and network of followers’ effect, when he talks about his theory of authentic leadership from a relational perspective. He also refers to relational theories of leadership in mentioning the vertical dyad linkage (Dansereau, Graen, & Haga, 1975) and leader–member exchange (Graen & Uhl-Bien, 1995) theories. However, these theories attempt to describe how leadership results in effective relationships and how these relationships develop among dyads (i.e., leaders and members) (Uhl-Bien, 2006). It is a further indication of his individualistic/entity stance as both these theories are of inter-personal relationships, not the process of organising.

Komives, Lucas, and McMahon (2007) propose an interpretation of relational leadership that seems to mix aspects of the entity and relational perspectives described by Uhl-Bien (2006). They associate leadership with an ethical process in which people attempt to bring a change. They then describe this as a purposeful process that can be achieved when everyone participates in vision creation. However, when they refer to inclusiveness as a relational aspect of leadership, it implies that leaders are the focus and they facilitate the participation of everyone in decision making and expression of their different views. Komives et al. (2007) demonstrate their entity perspective in statements about leaders’ ethical actions (following standards) and morality (doing the right thing). They elaborate that
modelling the way (J. Kouzes & Posner, 1987) is a behaviour of leaders that shows they stand by what they say, and to indicate their authenticity.

The interpretation by Ladkin and Spiller (2013) of literature around authentic leadership, however, seems congruent with the relational stance in RTL. They criticise some studies as being limited to individual actions. Claiming that their view of leadership is processual or relational, they argue that even authenticity is achievable through engagement with others. In fact, political, historical, cultural and other forces coming from organisational environment affect and interact with the individual’s self. However, as these relationships are explained by a focus on the actions of people and whether their action is authentic, their view can be seen as more interpersonal than processual. They also mention that leaders should be authentic in responding to emerging issues, in relation to other members. This authenticity is thus not to the leader’s self, but to history, culture, morality, humanity and those bigger stories (UABS Insights, 2014). Therefore, it appears to be a moral/ethical view of relational leadership.

Relational theorists of leadership, following what Uhl-Bien (2006) describes as a constructionist approach, have slightly different interpretations. Instead of being concerned about what is ethical and effective (Komives et al., 2007) or authentic (Avolio, 2007) behaviour, or being critical about effectiveness of styles of leadership (Conger, 2004; Graen & Uhl-Bien, 1995; House & Mitchell, 1975; Yukl, 1999), they suggest exploring what is really happening when people are influencing the direction of a change process. It is another step toward understanding leadership that moves from measuring relationship quality, to the dynamics of leadership relationships (Uhl-Bien, 2006). This exploration is not to find what is wrong or right about a leadership process, but to shed light on aspects of leadership that have been overlooked, and which could help explain how we can improve it. It is about theorising leadership or how to study it.

In studying organisations, relationality can be described as looking at “the space between” individuals and exploring reality in interactions between members, not their individual properties (Bradbury & Lichtenstein, 2000). Relationality is not an epistemological stance, which indicates how to enquiry about relationships or social processes (Cunliffe & Eriksen, 2011). It requires a relational ontology to see reality as an intersubjective phenomenon (Cunliffe & Eriksen, 2011), happening in the “space between” people (Bradbury & Lichtenstein, 2000). What we know about leadership is in relations between people and not the knowledge stored in our minds (Uhl-Bien, 2006). In fact, multiple realities (knowledge) emerge in cultural/historical settings (Hosking et al., 1995).

In the postmodernist stance, there is an ontological assumption of multiple truths and we can only come to understand a part of it through interpretations of people’s understanding of the object (Uhl-
Bien & Ospina, 2012). Constructionists, however, do not embrace a purely subjective assumption. They see reality as inter-subjective, meaning two subjects meet and interact to interpret an object, and thereby co-create a shared meaning of a new inter-subjective social reality (Uhl-Bien & Ospina, 2012). Therefore, leadership becomes real after we socially construct our understanding of it. From a methodological standpoint, constructionists need to indicate the pattern of relationships in which leadership emerges in practice. Therefore, communication and organising processes are prioritised over individual actions (Uhl-Bien & Ospina, 2012). Communication and language is a common focus in relational leadership studies (Fairhurst & Uhl-Bien, 2012; Hosking et al., 1995). The form of communication can play a part, affecting the outcome or the leadership process. However, understanding communication processes does not require a focus on leaders’ language, as is seen in the relationship-based or entitative approach.

According to Cunliffe and Eriksen (2011) there are three themes in relational studies of leadership:

1- Network theories: theories that study entities involved in a network of relationships and try to understand the position of leaders among other members. They include social network theory that assumes a specific position for leaders among other network elements. In addition, Actor Network theory (ATN) (Sidle & Warzynski, 2003) and social exchange theory (S. M. Campbell, Ward, Sonnenfeld, & Agle, 2008) highlight the role of other elements of networks, such as followers and organisations. These theories still focus on individuals.

2- Another group of studies have relational themes, but are entitative (Hosking et al., 1995). This group focuses on how leaders socially construct leadership through language and discourse. This is closer to the micro-level view of leadership that seeks the relational practice rather than leadership actors. Hence, they study leaders’ interactions and their influence processes in organisations. However, instead of describing the processes, the focus is still toward individuals, such as their linguistic characteristics (e.g., Samra-Fredericks (2003)).

3- “Collective social practice” studies: This group refers to how leadership is distributed and that everyone collaborates in its social construction. These studies consider leadership outside of hierarchical structures and as a practice of collaboration, trust and empowerment (Fletcher, 2001). This theme of these studies is the micro and macro processes of this collective act.

The third theme, which was adopted for this study, can be studied with an interpretive perspective, following relational theorists such as Hosking et al. (1995), Hosking (2006), Drath et al. (2008), Uhl-Bien (2006), Cunliffe and Eriksen, (2011), and Fairhurst and Uhl-Bien (2012). It can take a constructionist view by investigating “how people come together in a social process to co-create leadership and followership” (Uhl-Bien et al., 2014, p. 94). However, it would be inappropriate to label
all the studies within the collective social practice theme as constructionist. Bolden (2011) implies that Distributed Leadership (DL) is a notion used in the literature that follows constructionist views of leadership, such as Uhl-Bien’s. DL is described as focusing on a social construction of the reality of leadership, by which leadership is seen as an outcome of interactions within groups, rather than made up individual actions (Bolden, 2011). Similarly, Shared Leadership (SL) defined by Pearce, Conger and Locke (2008) is also viewed as a relational conceptualisation (Wassenaar & Pearce, 2012). It is “a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both” (Pearce et al., 2008, p. 622). However, Uhl-Bien and Ospina (2012) believe that theories such as DL, SL, and servant leadership are conducted with an entity perspective, and follow postpositivist assumptions.

The research methodology appropriate for the constructionist view would allow the researcher to inquire from the inside, as the way of coming to know reality is by being immersed in the event or the phenomenon (Uhl-Bien & Ospina, 2012). Given that, the knowledge created needs to be validated by experience that means the interpretations of the researcher should make sense to those experiencing it (Uhl-Bien & Ospina, 2012). The methodological and theoretical assumptions in this study of leadership are discussed in more detail in Chapter 3.

2.4. Innovation in Health-IT context

After organisational change and leadership, the third relevant area of interest to this study, Health-IT innovations, is explored in this section. There is a trend for acknowledgement by health systems of the need for change to improve quality (Institute of Medicine, 2001; Lukas et al., 2007), safety (Golden, 2006) or productivity (Toth, 2010). Toth (2010) has investigated significant changes in healthcare policies since the 1990s. Factors such as an aging population, rising costs, and new demands for access to healthcare information are reinforcing the need for change (K. Day & Norris, 2006; Toth, 2010). One of the drivers of these “waves of healthcare reforms”, as described by Toth (2010), is new technologies. From the advent of 21st century, many organisations have taken advantage of these capabilities to improve their performance, optimise their structure, or even transform their business based on new opportunities brought about by ICT. Most researchers in the field of Health-IT believe it will improve quality, safety and accessibility while reducing costs and errors (Black et al., 2011; Dal Molin, 2011; Goldzweig et al., 2009; Ingebrigtsen et al., 2014; Øvretveit et al., 2007; Schoen et al., 2009; Szydlowski & Smith, 2009; Warren et al., 2010).

The term eHealth has been used since the year 2000 to refer to Health-IT technologies (Pagliari et al., 2005). A review of the definitions and scope of work in the studies that had used this term, was done
by Pagliari et al. (2005). Although innovation was not their specific focus, they proposed a definition of eHealth as an emerging field in medical informatics that includes new ways of working and thinking to improve healthcare using information and communication technology (Pagliari et al., 2005). This definition, adopted from Eysenbach, highlights innovative ways of working through shared, global approaches to improve healthcare using IT capabilities (Eysenbach, 2001).

A systematic review of eHealth studies identified three categories of Health-IT technologies: 1) data storage, retrieval and transmission, 2) enabling decision support for clinicians, and 3) remote healthcare services (Black et al., 2011). This categorisation views HIT as a technical and support feature. In addition, eHealth is seen as having the potential to transform healthcare systems (Black et al., 2011). However, eHealth alone cannot bring about transformation; the context of the social interactions for these initiatives has to be considered (Homer & Baron, 2010). Given that, some researchers have considered eHealth systems (technologies) as innovative only if there was a transformative degree of change (e.g., Warren et al. (2010)). Numerous examples of implementing IT innovations can be seen in existing research studies of healthcare systems (Heeks, 2006; Hwang & Christensen, 2008; Koch, 2006; Lumsden & Gibson, 2011; Palmieri et al., 2011).

Governments have made various attempts at national scale changes through Health-IT initiatives. The national Health-IT programme of NPfIT in the UK was developed to integrate the healthcare system, make it paperless, and to improve quality safety and efficiency (Greenhalgh & Stones, 2010). The approach to implementation of this large scale change was top down, or government led (Bowden & Coiera, 2013; Greenhalgh et al., 2011). It was a radical (large scale) change introduced to the health system quickly, in a revolutionary form (Greenhalgh et al., 2011). Poor results and the dismantling of NPfIT (after 12 years), suggests that provision of shared electronic records on this scale is a complex innovation that requires more attention to its social aspects (Bowden & Coiera, 2013). A regional health information exchange (HIE) model was also adopted in the US to transfer and share health records (Bowden & Coiera, 2013). In contrast to the UK, the development of HIEs was initially bottom-up with added funding incentives from the federal government at the top, to stimulate the local initiatives. The barriers and challenges in this case were also seen to be social, cultural or economic (Bowden & Coiera, 2013).

New Zealand’s tactic of tackling social factors impacting national Health-IT programmes is considered a better approach than that seen in other OECD countries (Bowden & Coiera, 2013). This approach combines the advantages of the bottom-up model with central leadership and strategy. In this “middle-out” approach, local initiatives develop solutions that are compatible with local problems and national goals (Bowden & Coiera, 2013). National level strategies and policies, such as the NZ Health
Strategy and National Health IT Plan, provide central leadership and resources for IT development and implementation (as discussed in section 1.4). The Health-IT innovation studies mentioned above highlight the importance of the research question in understanding leadership of Health-IT innovations. In the next section, I describe the existing definitions of innovation to clarify the stance taken in the thesis in this regard.

2.4.1. Definition of innovation

Health-IT researchers have not been clear about their definition of innovation, or the reason they called Health-IT an innovation. The reason may be that innovation has been conceptualised differently in various disciplines (Gopalakrishnan & Damanpour, 1997). For business, it is considered a critical process for sustaining competitive advantage in the market (Baregheh et al., 2009). It is seen as a strategic issue in government plans and initiatives (Baregheh et al., 2009). In fact, definitions of innovation range from a new idea or product/technology (Kimberly & Evanisko, 1981; Nord & Tucker, 1987), to a process that covers technological development, marketing and commercialisation of the product (Charter & Clark, 2007; Van de Ven & Rogers, 1988).

Researchers of organisational innovations have classified different types of innovation. There are two broad categories of technical and administrative innovations that are interdependent (Damanpour, 1991; Van de Ven, 1986). Technical innovations are new technologies, products, and services, whereas administrative innovations include new procedures, policies, structures and administrative processes (Damanpour, 1991; Van de Ven, 1986). Similarly, two categories of product and process innovations have been referenced in the literature of innovation in business (Damanpour, 1991). New products or services developed are called product innovations. Process innovations are functionalities in operational and production lines (Damanpour, 1991). It has been argued that managers should recognise the differences when adopting these types of innovations, and also be aware of the close inter-relationship between technical and administrative innovations (Van de Ven, 1986).

A review of various definitions of innovation by Baregheh and her colleagues (2009), determined newness as one of the commonalities and key attributes attached to organisational innovation. As Van de Ven (1986) argues, innovation may only be perceived as new to people involved, and can be seen as an imitation by others. Thus it does not necessarily imply an absolute novelty. The other common feature of these definitions is innovation as a process that has stages and social context, and a means of innovation is required to reach the organisational aim of the innovation (Baregheh et al., 2009). Innovation has also been associated with change; it is either a response to change in an environment, or aims to change the environment (Damanpour, 1991). In business, design and development of new products or services by innovative employees can lead to a continuous change in organisation (Brown
Innovation, in a broader sense, brings change in ways of thinking and practices within a society in order to achieve benefits (D. Adams & Hess, 2010). However, the degree of change is not necessarily radical/transformative. An improvement in the outcome of a process could be still an innovation in some cases (Downs & Mohr, 1976), while in others innovation can define a completely new possibility that has not been thought of before (Lyytinen & Rose, 2003). This is described as disruptive innovation by Lyytinen and Rose (2003); the new idea and product can bring a radical change by incorporating a new architecture to define new needs.

Some scholars have defined innovation as the adoption of new ideas or products in a community (Lyytinen & Rose, 2003). Rogers (1995), who proposed a seminal theory about diffusion of innovation, defined innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p. 11). This implies that innovation is a social concept that is created only if it is adopted. Another example of linking innovation with the process of adoption is provided by Damanpour (1991): “innovation is defined as adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization” (p. 556).

In Damanpour’s (1991) view, adoption is not merely at the decision stage leading to the implementation and use of innovation (Wisdom, Chor, Hoagwood, & Horwitz, 2014), rather it contains the whole process of innovation from idea generation, to development, and implementation. Later, Gopalakrishnan and Damanpour (1997) distinguish two stages for innovations: generation and adoption. In this view, adoption happens after the generation stage (including idea generation, design & development and marketing). This adoption stage is explained by the two substages of: initiation (awareness, attitude forming, and evaluation of innovation), and implementation—when the decision is made to use the innovation for a trial period which can lead to complete integration of the innovation into the organisation (Gopalakrishnan & Damanpour, 1997).

Unlike Gopalakrishnan and Damanpour’s distinction of generation and adoption stages in innovations, a review conducted by Baregheh et al., (2009) argues that the boundaries between these stages are not clear. Stages of innovation including idea generation, development, implementation, adoption, and commercialisation can happen from different starting points in each area (Baregheh et al., 2009), implying that the boundaries for innovation development and adoption are blurred.

Instead of looking at stages of the innovation process, Van de Ven and Poole (1990) refer to the process of innovation development as the trajectory of “the temporal order and sequence of steps that unfold as an innovative idea is transformed and implemented into a concrete reality” (p. 313).
The development process that indicates change over time is what managers of innovations need to understand (Van de Ven & Poole, 1990). Therefore, it seems more compatible with the interest of this study to explore the innovation development process and social transactions that co-create leadership of the innovation. Given that, I used the definition provided by Baregheh et al. (2009) that summarises commonalities in a variety of definitions of innovations, and emphasises the role of social context and interactions in this process:

“Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace” (p.1334).

Unlike many definitions that fail to address the improvement or advancement characteristics of innovations, Baregheh et al. (2009) considers them as a result of the change process. Hence, in this study, I broadened my view of innovation by exploring the innovation development process through understanding people’s experience and perspectives of the HIT innovation, to find out what characteristics were attached to it. The next section summarises the limited literature found in the intersection of the three areas of interest in this study: change, HIT innovations and leadership. The aim was to help focus the research question and find a gap worthy of pursuing for this study.

2.5. Gap in literature (leadership of Health-IT innovation area)

Human and social factors are considered critically important in the outcome of large scale Health-IT initiatives (Bowden & Coiera, 2013). As mentioned in the introduction chapter, some have associated failure in realisation of the potential of IT in health care with factors such as lack of engagement and leadership of change processes (Altmann & Michael, 2011; Shortliffe, 2005). Some reports of innovation studies have suggested instability in results in relation to organisational innovation (Downs & Mohr, 1976). However, the contextual factors that could affect innovation implementations have barely been investigated in these studies (Goldzweig et al., 2009). Van de Ven brought attention to contextual and social factors of innovation processes (1986). He emphasised four factors in his definition of innovation: “new ideas, people, transactions, and institutional context” (p. 590). He also argued that leadership was a potential source of problems for managers involved in innovation.

Guided by the research problem, the existing literature was then explored for Health-IT initiatives that are considered innovative and which have also looked into the social aspects of leadership, to find the range of questions and theories used. This process helped identify a meaningful gap in which to carry out research that was worthwhile, and also allowed the research problem to be refined. Accordingly, a research query run in the ScienceDirect database returned 123 papers published since 2005. Most of the studies were excluded as they were either focused on adoption of innovation, or change
management issues such as readiness, or they were not in Health-IT field. Only three relevant articles were found. A search of the Business Source Premier database returned 37 articles, of which seven papers were selected as most relevant. Studies that examined implementation success factors for Health-IT projects were excluded unless they had significant relevant content relating to leadership. The number of studies (10) itself indicates a lack of research attention to the area of the problem. Below is a summary of research questions and findings of these 10 studies that address leadership of Health-IT innovations:

Most of the 10 studies appeared to have an individualistic view of leadership. For instance, Malloch (2010) explains how leaders can facilitate a creative environment. The study question was focused on looking into innovativeness and its pre-existing conditions, i.e., how to create the context in which innovation occurs. This process is called “innovation leadership” (p. 2). Other studies have applied an entity perspective to investigating leadership, including Bhandari, Tiessen, and Snowdon (2011) who adopted Kouzes and Posner’s (1995) tips for leadership: challenge the process, inspire a shared vision, enable others to act, model the way and encourage the heart. This approach was applied in a telehealth service in Canada and was reported as a successful exercise. In addition, Kotter’s (1995) eight steps for leadership was the knowledge base for another study that explored IS implementation in six hospitals in the US (Szydlowski & Smith, 2009). Their findings implied the importance of existing social interactions on leadership of these initiatives: interdepartmental collaboration; engaging employees; shared vision; and communication techniques (Szydlowski & Smith, 2009).

A study focused on policies and individual leaders (presidents and congressmen) in leading and driving the US Health-IT reforms is another example of an entity approach (Brailer, 2009). In some entity-based studies, the role of clinical leaders is considered important in the success of HIT implementations (Fickenscher & Bakerman, 2011), as they have opportunities to connect with other health providers (Fickenscher & Bakerman, 2011). Establishment of a governance model was seen as necessary to guide and manage the project; as well as strategies, and infrastructure to support clinicians (Fickenscher & Bakerman, 2011). Again these concepts relevant to social relationships were raised, but not clearly investigated.

Lessons learned from the implementation approach of a Health-IT project, shut down after eight years, were the focus of another study (Miller & Miller, 2007). A top-down approach was conducted by two organisations supported by funding from a philanthropic healthcare organisation. Here, the authorised organisations were considered leaders of this initiative. The initial assumption that leadership would grow among the community over time did not eventuate as the development of the infrastructures, business cases and the demand (momentum) were not coming from the bottom
layers. This supports the idea of emergent change and community/users’ role in leadership of it. The issues raised concerning social relationships and the importance of emergence of change within the interactions of community users can be seen in the following studies as well.

The aim of a study by Spetz and Keane (2009), was evaluation of the implementation and outcome of a hospital-based integrated IS. A limited view of leadership was taken which encompassed only the executive team members such as the CEO of hospital and their “clinical IT implementation coordinator” (p. 339). Although the language used to refer to leaders and leadership aligns with the entity perspective, there was some concern with the process of leadership that lay in interactions between clinicians using the Health-IT system. The authors referred to this issue as lack of clinical leadership, as most of the decisions were made by non-clinical people.

Finally, a number of leadership related theories were discussed in a study of the NHS experience of implementing integrated care (Balasubramanian & Spurgeon, 2012). It was proposed that transformational leaders are needed in the complex environment of healthcare to transform people toward the desired organisational outcomes. In addition, visionary leaders who can engage clinical leaders in such initiatives were seen as one critical factor (Balasubramanian & Spurgeon, 2012). Collaborative models of leadership such as shared leadership were identified as one of the current theories of leadership, implying that the role of individual influencers has been shadowing the process by which collaborative and collective leadership happens. However, the emergence of processual and relational issues can also be seen when clinical engagement and clinical leadership are being raised as key issues and priorities for leaders. Further investigation through a relational lens is required.

In addition to the studies reviewed at the beginning of the research, it is interesting to mention a recent article by Malloch (2014), which discusses the need to move toward new models and theories of leadership when studying healthcare changes through IT innovations. In this short paper, Malloch briefly explains the advantages of using complexity theory over transformational leadership. This complexity model follows Uhl-Bien and Marion’s (2008) theory, promoting the movement away from individual leaders to the collective process of leadership in complex environments. It also highlights the role of contextual factors including political, economic and social constructs. Hence, according to complexity theory, the emphasis is on pace of change (high rate of innovation adoption) in organisation.

A recent systematic review of studies on Health-IT adoption and the role of leadership also merits inclusion (Ingebrigtsen et al., 2014). Although not directly concerned with innovation development, I reviewed the paper to understand the trends in the studies of leadership and adoption, and any useful
findings relevant to innovation. Interestingly, most of the studies reviewed were found to have an individualistic (entity) perspective of leadership in examining adoption factors. The role of clinical leaders (i.e., their traits and behaviour) in successful adoption of Health-IT technologies in healthcare organisations is highlighted.

The review of literature in the nexus between the three concepts revealed very limited studies in leadership of Health-IT innovations, and most of them are focused on individual leaders. Moreover, these studies have indicated the importance of emergent change and social construction in leadership of Health-IT innovations. Therefore, an area of relative neglect was revealed in the existing literature by its focus on individual leaders (lack of relational studies), and the need identified for theories that help in predicting behaviours in social processes of HIT innovation development and its leadership.

2.6. Conclusion

This chapter has presented the result of an exploratory review of literature undertaken at the beginning of the study, that aimed to provide a basic understanding of the notions of interest, focus the research problem, confirm the research problem as worth pursuing, and elaborate the theoretical stance of this study. Reviewing the literature around organisational change indicated a new trend in which change is seen as pervasive, continuous, and bottom-up (the emergent view), and large scale change can be a cumulation of these everyday interactions. The leadership literature revealed a new perspective for investigating the leadership process, i.e., the relational view. It was understood that the researchers following this paradigm are raising awareness of it, but there are still inconsistencies in how they use the term relational, and what they mean by it. Therefore, it was seen as beneficial to shed light on this overlooked aspect of leadership perspective. In addition, the HIT researchers have not explored the social interactions and human factors in innovation development enough. The existing definitions of innovation also undermine improvement, focusing on transformational change and newness, in the expense of incremental change. Beyond these gaps, exploring studies that have combined these three notions (change, HIT innovation, leadership) revealed that this small literature is dominated by an individualistic view of leadership within HIT studies. It also indicated references to the importance of collective forms of leadership and emergent change.

Therefore, this gap identified in the literature was addressed in the thesis by conducting a relational research on leadership of a Health-IT innovation in New Zealand that is intended to bring a large scale change (whether it ends in improvements or transformation). This exploration is not counter GT as it meant I did not start data collection only with a raw idea of the main concepts, or in other words with an “empty head” (Dey, 1993). As a newcomer to the New Zealand context and to leadership and
organisational change disciplines, I needed to build my understanding of the notions of the study and be sensitised to the options (Heath & Cowley, 2004). In fact, this review was mostly helpful in regard to the theoretical assumptions underlying this study, and hence improved how I designed the research strategies and methods (see the next chapter). It was also not counter-intuitive to the main idea of GT methodology, that is building theory grounded in data (Glaser & Strauss, 1967), as I did my best not to get immersed in the existing theories and concepts and not to force them into my data collection and analysis procedures. The next chapter explains the research strategy designed for this study and elaborates the methods of data collection and analysis.
CHAPTER 3. Research strategy and methods

3.1. Introduction

In this chapter, the theoretical and methodological assumptions adopted for an appropriate research strategy based on the research question are described. The research problem explained in Chapter 1 was narrowed down after the non-committal literature review conducted in the beginning of the research. The question was developed to view the problem area (i.e., leadership of HIT innovations) using a social/relational lens (refer to section 2.3.2). The research question developed was: “how do patterns of behaviour in leadership and development of large scale innovations in HIT context affect each other?” The social view selected also applied theoretical assumptions to the study that need to be clarified in this chapter.

In this chapter, the research strategy consisting of an ontological and epistemological stance, plus the methodology selected to conduct this research, will first be demonstrated. Next, the data collection and analysis procedures used to study the research problem will be presented. It should be noted that in each section some practical points in data collection and analysis are referenced to the relevant findings chapter for more explanation, as it seemed more coherent to discuss them together.

3.2. Research strategy

In this section, I will discuss the decisions made regarding planning and design of the study before the research was conducted (Creswell, 2009). The first decision explained relates to the overall design of the study, which was qualitative. Later, the underlying assumptions (worldviews), that formed the research strategy and guided the research methodology, are discussed. Then, the methodology selected for this study is discussed to show how these assumptions and the purpose of research (developing a theory about leadership of HIT innovations) led to this selection.

3.2.1. Qualitative design

In describing the reason behind choosing a qualitative design for the study, I subscribe to Creswell’s (2009) description of qualitative design. That is a design in which the emphasis is mostly on qualitative approaches; though quantitative methods might be used depending on the requirements of the study. The first reason for choosing this design relates to the area of the study. This study is interdisciplinary as it is in health informatics. Health informatics covers the intersection of the three knowledge areas of IT, healthcare and medical sciences, and social sciences (Scott & Briggs, 2009). This sociotechnical area of study (Coiera, 2004) can be studied with qualitative, quantitative or mixed methods depending
on the nature of research question. It was clear from the nature of the question that a quantitative approach could not best gather all the parameters involved in this social context. In addition, both innovation and leadership as defined in this study are social processes without explicit variables, and hence they needed to be explored and discovered within the phenomenon under study. In fact, the research problem of leadership of HIT innovations has not been studied enough and an exploratory study was required to identify its main issues. Due to the complexity of health organisations, it is also advisable to design a qualitative study to fit the characteristics of the health informatics field (Plummer, 2001).

The next reason relates to the purpose of theory building in this study. Qualitative research allows the researcher to understand the context of the study and people’s motivation and actions (Myers, 2013). Although both quantitative and qualitative studies can be useful in organisation studies, the aim for theory building in this study of social processes (i.e., leadership and innovation) could best be performed using a qualitative approach, as many of the social and cultural properties of the study could have been neglected or superficially treated by a quantitative study (Myers, 2013). Finally, it should be noted that qualitative research is not necessarily interpretive. The researcher can choose any type of philosophical assumption in a qualitative study (Myers, 2013).

3.2.2. Epistemology and ontology (research philosophy)

The philosophical assumptions on which it is based indicate how the research question can be studied. These research philosophies provide “a basic set of beliefs that guide action” (Guba, 1990, p. 17). They are considered as similar to the notion of paradigm (Lincoln & Guba, 1985) or indicative of epistemology and ontology (Crotty, 1998).

In this section, first the framework chosen to discuss the theoretical assumptions is introduced. A discussion of the decisions made regarding this framework follows.

The framework to discuss the underlying assumption

A theoretical perspective can be understood by knowledge of the ontological and epistemological assumptions, and even the purpose of knowledge in practice (Chua, 1986). Ontology refers to beliefs about the object of study (Chua, 1986). It defines how physical and social entities are seen in regard to the viewer/researcher, and whether the object is independent or subjective (exists only via human interactions) (Orlikowski & Baroudi, 1991). Epistemology is defined by the Concise Oxford English Dictionary as “the theory of knowledge, especially with regard to its methods, validity, and scope”. Thus, it describes beliefs about knowledge and what can be accepted as truth (Chua, 1986).
To decide about my philosophical stance in this research, I use the three-fold categorisation of positivist, interpretive, and critical, suggested by Orlikowski and Baroudi (1991) and following Chua (1986). Chua interwove ontology, epistemology and the purpose of research to explain the three theoretical perspectives. The first perspective is positivist which is the form of study in natural science (Myers, 2013). It is based on the idea of objectivity of reality and based on the expectation that it can be measured through its properties, which are independent of the researcher (Myers, 2013). According to Orlikowski and Baroudi (1991), a research study in the IS field is positivist if there are propositions and hypothesis to be tested, quantifiable variables, and inferences from a sample that be applied to a relevant population.

The interpretive account claims that reality is accessible through social constructions, such as language and shared meanings. Understanding the phenomenon is possible by understanding how people make sense and give meaning to it (Myers, 1997; Myers, 2013). In other words, both reality and knowledge making are considered social products (Orlikowski & Baroudi, 1991). The concept of social construction of reality (Orlikowski & Baroudi, 1991) then refers to how people participate in making sense of (construct) the reality. Hence, the focus of interpretive research is on these “intersubjective meanings” (Gibbons, 1987, p. 3). To gain knowledge about social reality, the researcher needs to get inside the world of those building it (Rosen, 1991).

There are many similarities between critical and interpretive research in terms of epistemology. In a critical perspective, reality is historically constituted. People’s ability to change their society is believed to be constrained by social, economic, cultural and political forces that dominate their society (Myers, 2013; Orlikowski & Baroudi, 1991). Some constructed realities are imposed over others in society. Therefore, the researcher is supposed to bring those dominating forces that restrict the social actions into the light. The ethical base of critical research forms the concept of emancipation that refers to the aim of improvement in such studies (Myers, 2013). It means if these sources of dominance are understood, people can behave in a way that removes them (Chua, 1986; Orlikowski & Baroudi, 1991).

The decisions made regarding Ontology

Positivist and post-positivist philosophies have dominated traditional leadership studies, and their positivist standards of validity and rigour have mistakenly been applied to quality of leadership studies (Uhl-Bien & Ospina, 2012). Goulding (2002) argued that modernism, which has been synonymously used with positivist (Thomas & Brubaker, 2000), can only capture the surface of realities and is not capable of covering the depth of human experience. Similarly, the dominant philosophical stance behind information technology studies, which is another area of interest in this research, is positivist
(Myers & Avison, 2002; Orlikowski & Baroudi, 1991). This objective stance however, might not answer research questions aimed describing the relationships between individuals and technology in studying development and implementation of IS in organisations. Therefore, applying natural science assumptions to social science research, by considering organisations as structures and realities that exist independent of their members’ actions, seemed problematic for this study (Lincoln & Guba, 1985; Morgan, 1980; Orlikowski & Baroudi, 1991). It would result in losing social context, especially if all data is quantified (Myers, 1997).

One of the contributing factors in this decision making was the lens selected for studying leadership, as mentioned in Section 2.3.2, i.e., the relational perspective. Moving away from a positivist stance, many scholars in leadership studies have admitted that leaders and followers constitute reality together, and are relational beings (Drath et al., 2008; Fairhurst, 2007; Hosking, 1988; Hosking, 2007; Ospina & Foldy, 2010). This relational view is the most recent paradigm of the leadership field and is still trying to find its place and interact with the existing post-positivist paradigm (Uhl-Bien & Ospina, 2012). I take the perspective that leadership, organisation, and any social activity such as innovation development cannot exist separately from humans, unless they have been created by them and then found their own reality. Thus the reality is socially constructed but both objects and subjects may exist (Guba & Lincoln, 1994; Uhl-Bien & Ospina, 2012). In other words, the ontological stance in this research is relational by which reality is intersubjective. Crotty (1998) also described this ontological stance as both realist and relativist. It means when something is socially constructed, it is then real.

**The decisions made regarding Epistemology**

In terms of epistemology, then, it is not possible to know these relational realities of leadership and innovation development processes by drawing hypotheses deductively. There is a need to get inside and understand how meanings are formed, and then drive actions in these settings. The aim is to understand how people come together to co-create these realities. In this way, it was then possible to look into the relational dynamics (Uhl-Bien & Ospina, 2012) that are the interactions leading to social construction of leadership in the Health-IT innovation context. Therefore, the appropriate epistemological stance for this study is a subjective, meaning-centred approach that allowed the researcher to go inside the social context and use a qualitative methodology to interpret people’s relationships. In this stance there are multiple truths constructed inter-subjectively and the researcher negotiates them (P. J. Adams & Buetow, 2014). The researcher interprets the inter-subjective reality and co-constructs it with participants.
The decisions made regarding application of knowledge in practice

The last point about the research philosophy behind this study is the relationship between knowledge and practice (Chua, 1986). The purpose of the theory in this study was not to emancipate people from the conflicts in leadership of innovations, nor was there an intention to find effective styles of leadership. Defining performance-related variables to measure effectivity of leadership would require a value-free stance that draws hypotheses about effects of traits and behaviours of leaders. This study, on the other hand, followed a value-laden view that was intended to improve social relations in leadership of similar Health-IT innovations, and influence further innovation developments. It was also value-laden in the sense that the researcher’s beliefs, values and biases participated in interpretations (Orlikowski & Baroudi, 1991).

Final points

Given the ontological, epistemological and practical decisions made, the stance taken for this study was interpretive. It should be noted that there is nuance in different interpretive studies mostly regarding their epistemology. Some of them are at the end of the spectrum where knowledge making is purely subjective, in contrast with objectivists (Uhl-Bien & Ospina, 2012). This view, which believes reality is in the individual’s head, is called constructivist interpretive (Crotty, 1998). I subscribe to the other group of interpretive studies known as constructionist (Crotty, 1998). In this view, two subjects come together, interpret an object, and co-construct a third shared reality. Therefore, it is more appropriate to describe my epistemological stance not as purely subjective, but also as relational (Uhl-Bien & Ospina, 2012). Figure 3-1 summarises the research paradigm.

![Figure 3-1: The position of research paradigm](image)
This constructionist view holds a “double hermeneutic” root as described by Giddens (1976, p. 146). It is an aspect of social science in which the researcher is also the subject and interprets the phenomenon as do the participants (Myers, 2013). Hermeneutics “is the study of the theory and the practice of understanding and interpretation” (M. Freeman, 2008, p. 385). It can be seen as the philosophical stance of interpretive studies (Myers, 2013). Therefore, hermeneutics is the underlying theory for the understanding what happened in this study by interpreting data collected in various stages of the study. It fits because I have used a dialogic, holistic, and self-reflective process where understandings have evolved continuously in this journey, rather than as separate stages (M. Freeman, 2008). Inquiries are considered hermeneutic when “insights and understanding emerge from the joint construction of inquirer and participant (etic and emic views).” (Costantino, 2008, p. 117).

3.2.3. Grounded Theory Methodology

In this section, the overall methodology selected, Grounded Theory (GT), and its variations are introduced first. Then, the adaptation of GT applied in this thesis is described.

3.2.3.1. GT, the overall methodology selected and its variations

Grounded theory is the overall methodology selected as appropriate for a qualitative study with an interpretive approach, which is looking into the way people co-construct leadership of HIT innovations. It allows the researcher to immerse in the social context and collect any forms of data possible to understand meaning-making activities in society. In the problem area, which is development of IT-enabled innovations that could radically change patterns of behaviour in health systems, it was not possible to use deductive hypotheses to test theories. In fact, little was seen in the literature to enable deductive inferencing in this area. Therefore, theory building was seen to be helpful for the purpose of this research in practice; and GT as an appropriate inductive process for it.

GT, introduced by Glaser and Strauss in 1967, is “the discovery of theory from data” (p. 1). Unlike deductive approaches, it does not use a priori assumptions (Glaser & Strauss, 1967). Theory is developed grounded in data, as the result of systematically gathered and analysed data (Goulding, 2002). Glaser explained, "The goal of grounded theory is to generate a conceptual theory that accounts for a pattern of behaviour which is relevant and problematic for those involved. The goal is not voluminous description, nor clever verification" (Glaser, 1978, p. 93). Hence, the focus is on people’s behaviour in their social context (Goulding, 2002). It is an emergent iterative process in which theory, data collection, and analysis processes interplay and inform each other (Charmaz, 2013; Glaser, 1978). GT introduces techniques such as detailed exploration, constant comparison, and
theoretical sensitivity which enable the researcher to construct theory grounded in data (Richards & Morse, 2007). These techniques are explained below, based on Urquhart, Lehmann, and Myers’ (2010) key characteristics of GT:

- **The purpose of theory development requires the researcher to learn “theoretical sensitivity”** (Glaser, 1978). One step for theoretical sensitivity is to set aside preconceptions and remain sensitive to data (Glaser, 1978). It also allows the other characteristic of GT that is emergence of, or being true to, data (Urquhart, 2013). Theoretical sensitivity also requires being steeped in the field of study and understanding the context as much as possible to be able to generate categories familiar for the field of study (Glaser, 1978; Urquhart, 2013).

- **Constant comparison is the next characteristic.** It is about constantly comparing each instance of data with other instances coded in a category. In this way the meaning and structure of concepts and categories are continuously reviewed. After finding many instances of data, the real meaning of categories will be revealed.

- **The last characteristic is “slices of data”** (Glaser & Strauss, 1967). It means that different types of data can give different views about the categories and indicate new properties for them. It stresses the importance of having diverse slices of data.

GT also required iterative data collection and analysis which means the researcher conducts purposeful enquiry based on the analysis of each cycle. This data-driven design is called theoretical sampling (Richards & Morse, 2007). Therefore, there is a “series of smaller investigations, each one building on the results of previous studies” (Strauss & Corbin, 1998, p. 34). Theoretical sampling starts after the first data collection and analysis point, to complement properties of emergent categories (Charmaz, 2013). Constant comparisons help stimulate thinking to find new properties of categories and inform theoretical sampling (Strauss & Corbin, 1998). The functions of this strategy are justification of the concepts by more instances of data, following the story emerging in the data (Urquhart, 2013), and exploring dimensions of the study (Strauss & Corbin, 1998).

GT has also been diverged and adapted from its original principles, as outlined in 1967 by Glaser and Strauss in their book, “The Discovery of Grounded Theory”. Strauss and Corbin (1990) published another reading of the methodology which emphasised the coding procedure, rather than the interpretive and emergent nature originally intended by Glaser (Goulding, 2002). Glaser criticised this approach for constraining emergence and theoretical sensitivity (Glaser, 1992). He also believed that using a “coding paradigm” and what they introduced as “conditional matrix” as conceptualisation tools was, in fact, forcing a specific paradigm for coding and defining relationships between concepts (Glaser, 1992; Myers, 2013; Urquhart, 2013). The other source of difference was in the coding system.
Glaser used three coding steps as open, selective and theoretical coding. However, Strauss designed it in four steps (open, axial, selective and process coding). The coding procedure selected will be described in the next sub-section.

The last version of GT is a constructivist view, by Charmaz (2002) and Bryant and Charmaz (2007). The constructivist revision of GT by Charmaz is stated as having an ontological stance between realist and postmodernist (Bryant & Charmaz, 2007). The reality is multiple and can be redefined as the researcher is part of what is viewed (Charmaz, 2013). It follows an interpretive conceptualisation process built on the interactive and emergent process of its originators.

3.2.3.2. The adaptation of GT

The research philosophy of this study impacted my adaptation of GT. As mentioned in the previous section, the philosophical stance of this study is constructionist interpretive (described by Crotty). To explore social construction of reality, I followed the Glaserian’s interpretive and open-to-emergence approach, rather than the restrictive, procedural focused approach of Strauss & Corbin (1990). However, Glaser (1978) is known as an objectivist theorist who believes that “a neutral observer discovers data in a unitary external world” (Charmaz, 2013, p. 305).

My constructionist interpretive approach is actually closer to what Charmaz and Urquhart called constructivist GT. Bryant and Charmaz (2007) argued that Berger and Luckmann’s (1966) notion of social construction of reality is understood as a form of social constructivism. Similarly to my view, they also claimed that they did not believe in the extremist view of social construction, in which no external reality exists. The only difference is that Bryant and Charmaz believed that this social construction has to be understood from structuration theory, in which practices happen in a structure and result in a structure too (2007, p. 37). Therefore, it seemed their view of GT was closest to my constructionism view, according to Crotty’s (1998) description. Generally, I was not a purist Glaserian follower, and I used Strauss and other authors’ guidance when it worked for my research process.

The analytical approach that can be taken in GT may be any forms of inference such as induction, deduction, and abduction. Reichertz (2010, January) described the differences between the three terms, claimed that Strauss and Corbin’s approach is actually abductive inferencing. Abduction happens when we do not have any logical or probabilistic reason to infer based on the data available, but we can use our intellect to come up with a non-necessary true idea that best describes the surprising factors found in data (Reichertz, 2007, p. 219). These hunches can form hypotheses that need to be verified in another set of data collection, and in an inductive approach (Reichertz, 2010, January). Induction, then, can be quantitative—based on number of instances and probability of
occurrence—or qualitative—as a result of qualitative properties found in data (Reichertz, 2010, January). Finally, deductive inferences are based on existing rules in the field of interest. We apply those rules/hypotheses in a case and try to find instances of them in data to be able to verify them. In this way, they do not add anything to our knowledge (Reichertz, 2010, January).

Given, all these inferencing approaches, I found both abduction and qualitative induction as helpful inferences in this GT study. In the first two methods of data collection used in this study; i.e., observation and documents — it was most appropriate to do abductive inferencing as there were not enough instances of data to build concepts or their relationships inductively. However, later, in conducting interviews, I used induction (i.e., qualitative induction) to allow emergence of concepts based on their properties found in data and also to enable verification of abductions if possible.

The data collection strategy selected for this study, by use of a case study, also played a role in the adaptation of GT. Eisenhardt (1989) explained how GT, as proposed by Glaser and Strauss (1967), supported taking advantage of case study. She elaborated it by providing a different description of theoretical sampling, according to which cases should be chosen for theoretical reasons, in a way that helps to replicate or extend the emergent theory (Eisenhardt, 1989). Therefore, it was decided to take advantage of case study as a data collection strategy for this study (not a methodology). It was also seen as helpful to this theory building study (Eisenhardt, 1989), as the purpose of conducting a case study is to collect empirical data from real people in existing social structures and make an original contribution to knowledge (Myers, 2013).

Therefore, the case study strategy was used to draw boundaries for data collection and create a pragmatic limitation to suit the timeframe for my PhD. It was possible then to study leadership relationships in “a single social unit” that innovation development is happening in (Myers, 2013, p. 77). I could also identify the boundaries of study and differentiate people as being/not being part of the social unit (Myers, 2013).

According to the research problem, the shared care programme was selected as the case for the study, to look into their experience of innovation development (in a large scale) and leadership of it. This use of the Health-iT programme would limit the generalisability of findings to similar contexts. The transferability (applicability) of the results, however, would not be limited as the context of the study and the analytical procedure were described in detail to allow comparisons with other phenomena. The selection of next samples (e.g., interviewees) was also based on theoretical reasons bounded to this case.
As part of the data collection strategy, it was important to know when I should stop the iterative process of data collection and analysis in the case study. This decision can be made using theoretical saturation in GT. It is the point at which learning from the new instances of data is minimum, and the emergence of new categories is less likely (Glaser & Strauss, 1967). The researcher is then satisfied that the data acquired is sufficient to describe the categories arising, and to be able to explain the whole story coherently. In reaching this closure point, I also had to consider time-resource limitations in my PhD study in conducting as many data collection and analysis cycles as required to add meaningful new concepts into my theory. In each findings Chapter (Chapters 4, 5, 6, 7), this saturation point is also explained.

The coding procedure used in this study was the next factor in forming the adaptation of GT. The lowest level decisions in a GT study can be about its coding procedure. Conceptualising and data reduction, plus elaborating and relating categories are mostly known as coding (Miles & Huberman, 1994; Strauss & Corbin, 1998). The coding procedure I followed in this study is the Glaserian version, which includes the three stages of open coding, selective coding and theoretical coding (Urquhart, 2013). It is a bottom-up coding procedure that starts with detailed, line-by-line coding and ends with identifying semantic relationships between categories (Urquhart, 2013).

Open coding refers to analysis of texts (e.g., interview transcripts) at sentence or paragraph levels and attaching a code that summarises the text (Myers, 2013). This is the most basic level of conceptualisation, that is description of the phenomenon (Myers, 2013). Later they can be changed into more analytical codes, as the researcher thinks about the important issue in each piece of text. Thus, it is an iterative and reflective process (Urquhart, 2013).

The next stage of coding is selective coding in which open codes are organised and scaled up into categories that are of interest in the research problem (Urquhart, 2013). This should be continued until core categories, that are the most relevant categories according to the research problem, emerge. It is advised to look for one or two categories, and stay limited to the discipline area of the study (Glaser, 1978; Urquhart, 2013). The other important task in this stage is to start thinking about relationships between categories and write them as theoretical memos to help theorising (Urquhart, 2013). It is about finding interactions between categories and refining them (Myers, 2013).

The last step is theoretical coding that involves generation of inferential hypothesis that can predict the phenomenon (Myers, 2013). This is where the theory starts to emerge because theory includes categories (constructs) and relationships (Urquhart, 2013). In order to conduct the selected coding procedure, I decided to take advantage of a Computer Assisted Qualitative Data Analysis Software
CAQDAS tool called Nvivo, by QSR (Qualitative Research Solutions International) (NVivo qualitative data analysis Software 2012) company (Bringer et al., 2004). It should be noted that this tool is not selected as an automated way of coding/analysis, and the researcher still needs to make all the interpretations and conceptualisations by going through the data according to the GT coding procedure. It is designed to assist grounded theorists by providing an electronic way of restoring, managing and retrieving different types of data (texts, audios, videos, and pictures), enabling different types of coding and attaching memos to parts of data. It mostly helps in organisation of data and enables an efficient analytical procedure by eliminating the need for using multiple hard copies and the clerical tasks of accessing and managing data (Bringer et al., 2004).

3.3. Methods of data collection & analysis

In this section, I will explain methods of data collection used in this case study to help theory building using GT methodology. It covers three types of data collection – observation, document analysis, and interviews. In each section, I will discuss the method, and why and how the data was collected in this way, with a brief reference to the analysis.

3.3.1. Participant observation

Observation or as I mean in this study—participant observation—is a form of qualitative inquiry that involves seeing people in their own natural setting and interacting with them (Myers, 2013, p. 136).

Why observation?

My first reason for deciding to conduct observations at the beginning of this case study is that I come from a totally different culture and experience regarding social relationships in health systems. I will explain in more detail in Chapter 4 that my background knowledge and cultural experience necessitated me going inside the shared care programme and gaining inside understanding, so as to be able to collect other sources of data. Similarly, following Grounded Theory methodology, observation is suggested as a possible way of collecting data that “locates the researcher within the context” (Goulding, 2002, p. 64). However, as Charmaz (2013) elaborates, we should avoid going native (too involved) and keep objectivity. It can also help to better polish the research question.

Thus, the understanding gained at this stage seemed critical, as it would set a baseline for me as a newcomer to the context of the study (the New Zealand Health System), and as a researcher without health care knowledge or expertise. It could then provide a deep engagement and training in the field of study (Provenzo & Renaud, 2008, p. 552), to learn about terms/jargon people were using in specific ways (Myers, 2013). Moreover, the understanding that could be acquired in this way might not be
possible through interviews. Its advantages can be related to the longer period of engagement (comparing with interviews), enabling informal interactions with participants, and allowing the real actions to be seen (rather than hearing a formal story). In general, the main advantages of observations are in providing the opportunity to gain in-depth understanding of culture, attitudes and actions of people in a social group, from the inside. Its limitations include being able to observe only a small group at a time, and the risk of being too descriptive rather than analytical (Myers, 2013). Given all the potential benefits mentioned, it seemed more beneficial than risky to do a series of observations over the shared care programme meetings and gatherings, as the first stage of data collection. Being a newcomer to this context, also improved my position as a grounded theory researcher because it meant I didn’t have preconceptions and biases in interpreting the observation data.

*What is observation?*

To elaborate what observation means, I describe a number of important decisions that need to be made in order to run this stage. One of the decisions required is whether it should be a participant or non-participant approach. Non-participant observations are appropriate where the aim is to describe and follow certain social events (realities), without influencing them (an outsider’s perspective). Therefore, it should be applied in public places or by using a covert approach (though ethically problematic) to minimise the researcher’s influence on those observed. Making the researcher invisible and adhering to methodological standards required (such as taking notes on a scrap paper to less distract the observed) are among challenges of this approach (Flick, 2009, p. 223-225).

On the other hand, the participant observant is interested in seeing an interaction and understanding its meaning from an insider’s view, rather than the flow of events (Adler & Adler, 1998; Myers, 2013). It should be noted that participant observation is an influence on the observed because of the researcher’s participation. However, the benefits that can be obtained justify its use: an insider insight, building a foundation for further enquiries by viewing everyday issues and conditions, an open-ended iterative process of collecting facts and interpreting main issues, and establishing relationships with people in the field (Flick, 2009).

Therefore, it was more appropriate for me to choose the participant version of observation to benefit from inside learning from the New Zealand health system, and characteristics of the social group selected (i.e., shared care programme).
How & what was collected:

I was able to gain access and build trust with members and managers of the programme through my connection with the university where I am studying. I participated in an academic team (from the university) involved in the evaluation process of the programme, and asked to gain access to formal meetings of the programme for the purpose of my study. The level of access to the field can reflect in the quality of data (Myers, 2013). I had access to most of the formal meetings and public events of the programme. There were, however, some internal meetings to which I did not have access. It should be noted that although I tried to be a participant observer to gain an inside view, at times I may have occasionally performed non-participant observation, and people might have seen me as an outsider. Nevertheless, I tried to take advantage of being able to talk to my colleagues, especially those in the evaluation team, for that reason.

I collected data during observations by writing field notes, in addition to receiving meeting agendas, minutes and pre-readings that were available to the attendees. I tended to record my thinking and feelings, accompanying them with meta information such as time and place, as suggested by Spradley (1979). This note taking happened at the end of the day of observation, or right after the meetings, before I forgot important details. Field notes should be as dense as possible including observer’s reactions and reflections (Myers, 2013). Hence, this was a reflexive task.

The data collection in this stage started in June 2012 when the programme was in its third phase, iterative implementation and extension. Figure 3-2 presents a rough outline of the shared care programme phases and processes to indicate where the data collection happened.

![Figure 3-2: Shared care programme’s phases at the time of observations](image)

The duration of field work varies depending on the type of methodology. In management research Myers (2013) suggested conducting observation between four to eight months. In accordance, I continued observations for eight months, until February 2013—covering 19 meetings—until I could easily understand the terms used regarding the innovation, relationships and general patterns of behaviour in this social context.
**Analysis:**

These sources of data built my understanding of the meaning of the shared care programme as an innovation, and its main concepts. It also allowed me to know the stakeholders and major events in this initiative. My field notes indicate how my insight has been shaped, or even changed (Myers, 2013).

To analyse the data, I used Van de Ven and Poole’s (1990) framework of innovation development to interpret the case and its main concepts. In addition, I followed abductive inferencing (as explained by Cunliffe & Eriksen (2011)) to reflect on my understandings, and come up with possible inferences about perceptions and meanings behind relationships in the innovation development process. These inferences, then, needed to be verified in the next stages of data collection. This analysis stage was my last work on observations, after planning what needs to be done, and collecting data. The method of analysis and inferencing, plus other notes about the data collection method (e.g., field note taking using Spradley’s (1979) three phases) are explained in the next Chapter (4), where the whole process and findings are presented.

At the end, memos written out of observations guided me to the next stage of data collection, programme documents, as prescribed by Glaser (1978). It was a guide for potential sources of data for theoretical sampling, which supported the idea of being open to what data say, rather than following preconceived understandings of the issues.

### 3.3.2. Document analysis

**Why documents?**

As mentioned above, observations guided me to the programme documents as they were referenced constantly in the conversations of people, as a way of communication among stakeholders. Documents can provide data to further enrich our understanding gained by observations and interviews. They can provide background information that might be used to prepare interview questions (Myers, 2013). In addition, according to Glaser and Strauss (1967), this stage of document analysis can be another source for “slices of data” that then lead to new properties/dimensions of the categories, and for comparison with other instances, or to guide theoretical sampling. Therefore, the purpose of collecting and analysis of documents in this study was to explore communications in the shared care programme, to be able to understand the meaning behind them and make more inferences about the background of the programme before starting individual interviews.

It will be explained in Chapter 5 that this meaning-centred view of communication is based on Weick et al.’s (2005) description, and is compatible with my theoretical perspective in studying leadership.
In this view the aim is to learn about how people make sense and frame actions and behaviours, rather than how they transmit messages to influence others (traditional view) (Fairhurst & Connaughton, 2014). In fact, in traditional studies, leadership is transmitted via communication, but, in the relational view of leadership that I subscribe to, communication is a key aspect (Shamir, 2007). The distinction between these perspectives is explained more in Chapter 5.

**How & what was collected:**

Documents can be web pages, newspapers, emails, organisational records, and photos. It can also be expanded to include any form of digital files including videos (Myers, 2013). In this case study, I refer to documents only as written texts (paper-based or digital). The documents I had access to were mostly private (produced by organisations involved in shared care for their internal use), or public (produced by them for public consumption), according to Payne & Payne’s (2004) classification. In Chapter 5, more details about how I collected them are explained. I also used the internet as a source of digital documents to find news and public documents reporting on the programme, produced by its members (not external reviewers). In total, I collected 874 MB of digital data containing 649 files. After reading through the documents I selected 460 files, equal to 272 MB of data, that matched the criteria defined based on the objectives drawn up for this stage (refer to Chapter 5 for more explanations).

The documents were selected if they were relevant to the innovative idea of the programme (e.g., proposals, idea drafts, ...), leaders and managers’ meetings/reports, decision making groups, project management teams, newsletters/leaflets reporting on the vision and the progress of the programme, emails, letters or other methods that communicated important decisions or events, and how the change is perceived and discussed in the public forums and reports. Table 3-1 summarises the types of documents analysed and the number of files in each category.

### Table 3-1: Types of the documents analysed

<table>
<thead>
<tr>
<th>Type of document</th>
<th>Number of files</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting minutes</td>
<td>91</td>
</tr>
<tr>
<td>reports/agendas/discussion papers</td>
<td>180</td>
</tr>
<tr>
<td>newsletters/leaflets</td>
<td>34</td>
</tr>
<tr>
<td>report on the vision, governance, and leadership of the programme</td>
<td>8</td>
</tr>
<tr>
<td>Design, Implementation, communication, and evaluation plans</td>
<td>44</td>
</tr>
<tr>
<td>Seminars, conferences, and information papers to other organisations</td>
<td>62</td>
</tr>
<tr>
<td>Emails/letters</td>
<td>38</td>
</tr>
<tr>
<td>Relevant projects’ documents</td>
<td>3</td>
</tr>
<tr>
<td>In total:</td>
<td>460</td>
</tr>
</tbody>
</table>
The method of analysis selected for this set of data was adapted from content analysis, as described by Krippendorff (2004). It allows taking advantage of both quantitative and qualitative data and could lead to meaning-centred inferences about communications in the shared care programme. It is “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use” (p. 18). Krippendorff distinguished this definition from others by clarifying that content analysis is not just a description of the content inherent in messages, but is affected by researcher’s theoretical philosophy and interpretation. He suggested a framework that provides six components to guide design, analysis and examination of content analysis. The components are text, research question, context, analytic construct, inferences and validating evidence. It should be noted that validation of inferences was not covered in this stage. The inferences were followed as probing themes in the next stages of data collection, through interviews. They were able to be validated if participants raised relevant issues and discussed them in interviews (more explanations in Chapter 7).

I followed Krippendorff’s (2004) framework and tips to prepare documents for the analysis. One part of this preparation procedure was unitising, that is selecting the parts of texts that are of interest. It included deciding about sampling, coding, and context units. According to Krippendorff (2004), it is reasonable to start with a research question and read the text for a purpose, not simply follow where the author leads. The focused questions developed for this stage, plus more detailed descriptions of sampling and choosing the appropriate coding unit/settings, are presented in Chapter 5.

The context of analysis refers to the knowledge that the analyst applies to the text to make inferences. The analytic constructs are if-then rules that result in the inference of the analyst. They are “mini-theories of a context” to answer the research question (Krippendorff, 2004, p. 35). Hence, this part of the analysis, which used existing rules, was deductive and was conducted using a Computer-Aided Text Analysis (CATA) tool, called Leximancer (Leximancer Pty Ltd, 2011b). The analyst’s inferences, on the other hand, are of the abduction type. That means if we read the text a non-necessarily true inference can be drawn, that can best explain the information (Douven, 2011). Abductive inferences link distinct domains unlike inductions that are generalisations in one domain. An example of abduction inference is inferring if someone is lying from his or her facial expressions. These abductions were to answer the research questions developed earlier.

Leximancer is a tool that can facilitate content analysis by visualising a broad context (large amount of data) and summarising what appears in the whole data set (Cretchley, Gallois, Chenery, & Smith, 2010; A. Smith & Humphreys, 2006). It analyses the text by providing both conceptual (i.e., thematic)
and relational (i.e., semantic) analysis (Colley & Neal, 2012). The clustering algorithms that are used in Leximancer are based on Bayesian Decision theory, which uses the observed data and the probability of each state to predict the next state with minimum cost (C. Freeman, Cottrell, Kyle, Williams, & Nissen, 2012). It can indicate relevancy of words and concepts. Using Leximancer helps data reduction (statistical representations e.g., frequencies) and finding themes to reveal meanings in the data. Using this tool, association between concepts are deducted from the texts based on mini-theories (hypotheses) embedded in it, and statistical representation of texts (quantitative analysis). It may become easier to make abductive inferences about meanings behind texts by looking at a concept map of highly connected and relevant concepts and their context.

This approach is not an automated analysis, as the researcher’s interpretations—by reading the documents, being in the field, and inferences—are the main part of it. Leximancer uses data mining techniques and adds visualisation to the text search over the data and enables an effective early understanding of qualitative data. In this case, association of emergent themes from written texts with the minds of the authors (correlation with mental states) would be an abductive inference that may or may not be true (A. Smith & Humphreys, 2006). Therefore, they needed to be validated in the next stages of the study.

Leximancer also indicates the strength of relevance/connectivity between two concepts by the number of times they co-occur. It is apparent that Leximancer fits within “computational content analysis” group of Krippendorff’s (2004, p. 281) categorisation of text analysis tools. It uses statistical association approaches to extract concepts. One of the theories of meaning behind it is association psychology: When words co-occur in texts it reveals an association between them in our mind (Osgood, 1959). Meaning of words can be associated with their proximity in a text block (Cockcroft, 2009). Leximancer uses co-occurrence and frequency of words in the texts to build thesauruses for seed words. In this way, a thesaurus is built by iterative learning from text and extending each word’s definition. It applies machine learning techniques to find themes of relevant concepts and indicate how they are related (A. Smith & Humphreys, 2006). One of the outputs is called a concept map, that is a visualisation of words based on their relevance and co-occurrence. Each set of highly connected words are grouped in a central concept (which can be manually set). Concept maps and list of ranked concepts allow researcher to start interpreting the data. They provide links to the original text excerpts that the concepts and themes emerged from and enable exploration of meaning within, and qualitative analysis, of data (Rooney, McKenna, & Barker, 2011).
As mentioned earlier, it seemed to be more helpful to describe the details of sampling and coding procedures, using Leximancer, in the introduction to Chapter 5 before presenting the findings of this analysis.

3.3.3. Convergent interviewing

**Why convergent interview?**

After gaining insight about innovation and its context in observations, and also getting to know the meaning of communications through document analysis, it was time to start the interviews. According to Walsham (1995), interviews are the primary source of data for interpretive studies, as they can provide participants’ perspectives about actions and events and show their views of themselves and others in the phenomenon. I decided to separate the focus of interviews into two stages, to first identify the main issues of innovation development, and then use them to discuss leadership relations in the next stage (more explanations in Chapter 6). The approach selected to enable an effective and quick process of interviewing key informants, and converge the interviews to find the main issues in the innovation process, was convergent interviewing (Driedger, 2008; Rao & Perry, 2003).

Conducting convergent interviewing requires the researcher to have prior understanding of the area under study to be able to develop rapport with participants, recognise potential important issues, choose appropriate people, and ask relevant opening questions (Driedger, 2008). Reviewing literature is encouraged to achieve this (Dick, 1990). In this research, a preliminary literature review and two stages of observation and document analysis, provided the required understanding to build the base for conducting interviews.

**What is it?**

Convergent interviewing was developed by Dick (1990) to obtain people’s perspectives about their experience, attitude and knowledge and be able to see these converge after a set of interviews (Driedger, 2008; Riege & Nair, 2004). Generally, it follows in-depth interviews but applies structures to make it easier to converge around priority issues after a few iterative refinements. It benefits from rich content as a result of constant comparisons between interviews and theoretical sampling (Driedger, 2008), similar the suggested strengths of grounded theory techniques (Strauss & Corbin, 1998).

Convergent interviewing is known as an efficient method in change and development projects similar to our case study (Riege & Nair, 2004). This technique takes advantage of both unstructured and structured interviews (Dick, 1998). The first part of data is collected with broad questions (open-
ended). The data is then analysed systematically to determine the next data collections (probing questions). This procedure improves efficiency and decreases bias (Dick, 1998). Conducting interviews, interpreting them and comparing them with other interviews, is a cyclic part of the technique that will end when saturations happens (i.e. no new issues or significant information is added) (Dick, 1998; Dick, 2014). Therefore, it seems what Dick mean by convergence is not achieving agreements on the issues/themes raised, but it is in progressing to more focused probes (from open-ended questions) and finally to the saturation point similar that described in Grounded Theory approaches.

Others including Riege and Nair (2004), and Rao and Perry (2003) associate convergence with reaching agreement and explaining disagreement. Riege and Nair (2004) elaborated convergence by emphasising patterns of agreement or disagreement (divergence) in the participants’ interpreted data. The probe questions are supposed to identify where data agrees with previous data, and in what conditions it diverges (Riege & Nair, 2004). Inclusion of both agreed and disagreed issues in the final categories of issues will illuminate dimensions of the problem (Riege & Nair, 2004). Therefore, when an issue is raised in an interview, it should be tested in the next one until a clear pattern of agreement and disagreements can be found between all or most of them (Riege & Nair, 2004). In this study, I decided to consider the end point as a combination of both saturation and clear pattern of agreements/disagreements, as above, to get a balance of both. In the following section, I explain how an adaptation (variation) of convergent interviewing technique was used as being more appropriate for this study.

**Adaptation of convergent interviewing technique**

A structured way of decision making among group of experts, known as the Delphi technique, gave me the idea of using a variation in convergent interviewing in my study. The Delphi technique is comparable with convergent Interviewing, as it aims to reach agreements among a group of experts where prediction/judgement suffers from lack of data (Rowe & Wright, 1999). It was developed and used by RAND Corporation in the 1950s for planning and forecasting based on expert consensus (Bowles, 1999; Hasson, Keeney, & McKenna, 2000). It is an iterative decision making process that has been commonly used among health and social science researchers (Hasson et al., 2000). In order to reach consensus by combining opinions of a group of experts, a series of structured questionnaires (rounds) is suggested to be used. The first round though may only collect qualitative data (using open-ended questions) and then the analysis of this data would be used to give controlled feedback to each participant with appropriate quantitative data (Bowles, 1999; Rowe & Wright, 1999).
The feedback should be anonymous and will improve accuracy of predictions if reasons are included rather than just statistical information (Rowe & Wright, 1999). Hence, the responses would be summarised in each round and presented, in addition to statistical summaries (such as mean/median and standard deviation) to indicate their place among the group member’s answers (Hasson et al., 2000). Generally, it is a very structured technique for group decision making rather than theory building.

In this part of my study, the aim was to identify what issues and characteristics (of the innovation) were raised by most of the experts even if they could not agree on the reason/causes, solutions, or the properties they had seen in their experience. It was my task to analyse participants’ data and find the best way to conceptualise the issues raised and form abstract categories of them. In addition, when the Delphi method suggested using statistical analysis and giving controlled feedback (Hasson et al., 2000; Rowe & Wright, 1999), it was for the sake of facilitating easier decision making. It did not seem necessary if the aim was to build a theory that includes focusing the enquiry, testing the emerging theory (concepts) and explaining the dimensions. Therefore, the Delphi technique inspired me to use a variation of convergent interviewing.

The only useful aspect of the Dephi technique that seems to be beneficial for my enquiry was to give feedback or the summary of the raised issues to the participants and allow them to review their answers and comment about their agreement or disagreement with the new issues. Therefore, instead of continuing the interviews with new people to reach to the convergence point for all the raised issues (Riege & Nair, 2004), going back to some of the early participants seemed to add to the balance of the contents discussed with each participant.

**How and what was collected:**

The criteria considered for selection of interviewees in this stage were:

- Being highly knowledgeable about the innovation development of the shared care programme
- Being involved from early stages
- Covering formal leaders or managers of the programme
- Including different groups of stakeholders where possible (Vendor, clinicians, project managers, academia)
- Participants who were more likely to be able to be in next rounds of interviews, if needed.

Working with the evaluation team for the programme allowed me to get advice about potential interviewees from someone inside. In addition, attendance at a number of management/leadership
meetings during observations was another opportunity for me to know the stakeholders. These opportunities eliminated the need for using snowball sampling (indirect sampling as mentioned by Dick (2014)) to identify formal leaders/managers who could fulfil the criteria above. Although I did not ask them to introduce new participants, they sometimes referred to people who had management or leadership roles, and could be knowledgeable about the innovation. I investigated their profile and consulted with my supervisors to see if they might have additional perspectives or knowledge areas to those on the list of interviewees.

Therefore, I selected participants from those suggested by my advisors (“working party” as defined by Dick (2014)) by reviewing their profile with my supervisors and also based on my learning from observations. I identified 16 people in this way. Four of them were considered more appropriate for the next stage (leadership interviews). I started the interviews with the most informed people from the list, keeping maximum diversity in my sample (Dick, 2014). Maximum diversity serves the purpose of reaching saturation as it allows the presentation of different views from early on, and the reaching of convergence of agreement and disagreement (Dick, 2014). After eight interviews, the discussions and concepts emerging were close to saturation. It seemed appropriate to seek exceptions (reason for disagreements), by giving feedback to the earlier interviewees. Three of them accepted to participate in the second round of interviews, where the concepts emerged reached the saturation point and all the agreed and disagreed issues were explained. Therefore, a total of 11 interviews were conducted during seven months (Jul 2013—Jan 2014) in this stage.

The interviews were all recorded except for one, not permitted by the participant. I took notes of the interview and attended to my notes soon after the interview to review and expand it from memory. I transcribed one of the interviews, however, as it was time consuming for me as a non-native English speaker and the accuracy could be jeopardised, the rest of them were transcribed using an authorised transcribing agency recommended by the university.

The participants involved were 7 women, and 1 man. In terms of organisational affiliations, there were 2 people from the managing company, 2 from the IT vendor, 1 from NHITB, 2 academic people, and 1 independent consultant for implementation purposes. Three of them were also members of the DHBs involved. The combination of the interviewees according to their role within the shared care programme was: 2 project managers, 2 members of the evaluation team, 1 patients’ representative, and 3 managers involved in implementation and user support.

Rapport building is important in conducting interviews to encourage the interviewee to reveal what they know and to trust the researcher. I followed Dick’s (2014) suggestion: giving genuine, undivided
attention to the participant and indicating interest in the subject by using natural and intense curiosity. He advised that rapport would be built and kept, if you maintain eye contact and take fewer notes (Dick, 2014).

I used general topics as open questions to start the discussions with interviewees (Dick, 2014). I did not follow a sequential or structured interview guide as I aimed to allow participants to express their thoughts and experience without introducing content. In fact, I used a checklist of probes and tried to keep them in my mind so that I could pursue them whenever the participant mentioned a relevant point (participant-driven probing). For instance, as the first opening question, I asked them to talk about their interest in this programme and how they got involved to allow to feel comfortable in reviewing their early days in the programme, and reflect on their motivations for being part of the initiative. According to what was emerging in their responses, I asked them to elaborate on their perspective of the programme as an innovation, its characteristics, significant stages/events, and its outcome. In addition, probing questions from previous stages, refer to the introduction of Chapter 6, were also inserted if the interviewee raised an issue relevant to the questions.

Next interviews were also built using issues raised in earlier interviews. It then became focused and more detailed in questions as it is expected as part of convergence (Dick, 2014). Participants were supposed to reflect on the emerging interpretations and indicate their agreement/disagreements (Dick, 2014). Therefore, the probing questions turned into narrower questions along with presenting what the other interviewees were thinking about the issue. When disagreements were found, I developed probing questions that seek explanations for them rather than focusing on the overlap of data between present and past data (Dick, 1998; Dick, 2014). Whatever is emerged from data, then, is to be questioned for disapproval. Otherwise, it will be considered as part of the emerged categories or the theory. This is equivalent to constant comparison in grounded theory (Dick, 2014).

I also took short notes during the interviews to capture as much data as possible, in addition to recording the conversations (Driedger, 2008). It was to help improve my interpretation of transcripts and remind me of my thoughts and impressions of what the interviewee was saying.

Analysis:

The analysis of the transcripts was performed following the Glaserian coding approach, which is explained in the next section, as the analysing and coding procedure for these two stages of interviews was the same. Analysis was conducted as interviews were completed, using the Nvivo software, so as to be able to get feedback to participants in the next interviews. In addition, the analysis indicated when saturation happened. This is the time new concepts do not emerge and properties and
dimensions of concepts become rich enough. It should be noted that the agreement of people on why the main issues occurred and how they could be solved was not be necessary, but their clear explanation of the reason behind disagreements helped clarify properties of concepts emerging.

3.3.4. In-depth interviews

Why in-depth interview?

In-depth interviews are useful for theory building or finding themes and relationships between them (Schensul, 2008). It is a common method in qualitative research design (Lincoln & Guba, 2000). As mentioned earlier, at this stage, data gathering focused on leadership relationships was required. Integrating all the previous stages of data analysis by using the inferences developed and the innovation issues emerged was also necessary to validate them and apply them in the final findings. Therefore, in-depth interviews appeared to be the best option for this purpose.

One of the criticisms of this approach is that the researcher has limited opportunity to observe the actual experience, or to be able to understand the real motivation behind actions. This is why the combination of in-depth interviews with other methods of data collection including observation and document analysis is suggested (Cook, 2008).

What is it?

In-depth interviews are to encourage participants to talk in depth about their experience and the topic of enquiry (Cook, 2008). Instead of asking extensive focused questions, the researcher should know major domains of experience to be able to find their relation to the topic of enquiry in the discussions (Cook, 2008). In fact, in-depth interviews are considered synonymous to semi-structured interviews (Cook, 2008). In this method, there is an iterative process in which the researcher introduces a topic, then the participant explains his/her account of it, and then the researcher probes for further information (Cook, 2008). It takes advantages of both structured and unstructured exchanges and minimises the risks. It allows bringing some focus/control to the session by a few prepared questions while giving the interviewee the opportunity to discuss other aspects of the phenomenon to add more insight (Myers, 2013).

How and what was collected:

I started this stage of interviews from formal leaders and managers of the programme, and followed the theoretical sampling technique to find next points of data collection. In fact, the rest of interviewees were identified, as they were referenced as having high contribution in implementation of the new way of work or adoption of innovation, even if they were not formal leaders. Hence, the
interviewees were asked to nominate any groups or individuals who they perceived as important. The selection of interviewees, however, depended on evidence found to support the people nominated as having enough experience and contribution to this initiative, or they could add insight to an area of interest that required more enquiry (theoretical sampling).

In the beginning of each session, I introduced myself again (as some of them already knew me from observations) and explained the purpose of my research and the reason I had selected them. Then I started the conversation by asking them to talk about their role within the programme, and how they got involved with it. The question allowed them to introduce themselves as they preferred and lessened the pressure of being interviewed. It also was a chance for me to know them better and understand how they viewed themselves within the programme.

Then I showed them a concept map of the main issues emerged in the previous stage of interviews and asked for their opinion about their importance. As Urquhart (2013) explains, it allowed me to justify previous concepts and their significance considering the number of incidents added. In addition, holding emerging issues of innovation development improved my conversation with participants in this round, as I could prepare some focused question for each participant based on their background and interest, to explore each issue in more depth and to encourage them in conversation. It was important to allow participants to use their own words and answer the question at length, to provide helpful data to understand their perceptions, beliefs and meanings of behaviours (Schensul, 2008). Meanwhile, I redirected participants when they deviated from the issue or avoided responding (Schensul, 2008).

The number of interviews depends on finding various voices among interviewees and also on reaching saturation point. It is actually rooted in the epistemological stance of the study, as interpretive researchers follow the emergence of concepts and theory and may not be able to predetermine the number of interviews they require in advance (Baker, Edwards, & Doidge, 2012). Therefore, in this interpretive study I considered GT saturation point as the guide for closure of interviews. In addition, there was a limited number of experts who were also willing to participate in the study. I also had to consider the time-limits imposed on a PhD study to make the best decision on this matter. Eventually, 21 in-depth interviews were conducted in this stage and were integrated with 11 convergent interviews from the previous stage, to make a total of 32 interviews.

The interviews were face to face unless participants preferred to be interviewed by phone or via video conferencing technologies (Schensul, 2008) such as Skype, or other technologies they had access to. At the end, 18 interviews were face to face, two by phone, and one by video conference. The
combination of participants included formal leaders, meso-level managers, and informal micro-level influencers. It comprised 12 clinicians (including doctors, nurses and specialists) and nine non-clinicians (including managers, academics, patients’ representatives and IT-knowledgeable people). Only six of them were users of the IT system as well.

**Analysing and Coding procedure**

The interviews were both audio recorded and written down in quick notes at the time of interview. The recordings were transcribed and the notes were expanded as soon as possible after the meetings (Schensul, 2008). In arranging transcribing of the recordings, I followed the verbatim approach. “Verbatim transcription refers to the word-for-word reproduction of verbal data, where the written words are an exact replication of the audiorecorded words” (Halcomb & Davidson, 2006, p. 38). In studies with GT methodology, it is critical for the researcher to be close to the data. Therefore, verbatim transcription is suggested to be beneficial for them (Halcomb & Davidson, 2006). As with the previous stage, I preferred to use a professional transcriber. As this process is still prone to human errors (Halcomb & Davidson, 2006), I have also cross-checked against the original audio recordings, where I was not sure about the content of transcripts or where the transcriber had indicated her inability to recognise the words (especially names or context-specific terms). It is also stressed as important to use notes and memos during and after interviews, to reflect on the researcher’s interpretations and thoughts (Halcomb & Davidson, 2006). I tried to take notes during interviews as long as it did not make me appear distracted, or affect my eye contact with the participant significantly. Having audio recordings at hand assisted me in reducing my bias by reviewing the conversation, and making sure the meaning was presented and understood as accurately as possible (Halcomb & Davidson, 2006).

In analysing the interviews, I followed the coding procedure explained earlier in section 3.2.3 (i.e., the Glaserian approach). I moved from words, to sentence and paragraph levels to do open coding. It was possible to code a sentence or paragraph with multiple codes to cover all the meanings interpreted from the text. The coding process was iterative, meaning that the coding could be improved and refined with any new instances of data and by comparing it with other codes. This process was followed even during the next coding stage, that is selective coding. Sometimes an open code was analytical enough to become a selective code itself. At this stage, hierarchical categorisation of relevant concepts (properties and dimensions of a bigger category) formed gradually and some ideas about relationships between categories were written down as theoretical memos. Later, the other relationships between categories emerged based on theoretical memos and finding many instances of those relationships in the data.
In this coding procedure, I went through layers of conceptualisation from open codes to more analytical and theoretical levels. The terms I have used to refer to these layers are depicted in Figure 3-3. In order to reach a desired abstract level that included one core category for the study, I conceptualised data in five layers. The way I have used the terms code and concept in this text is mostly interchangeable; however, when I want to stress the analytical form of open codes, I have tended to call it a concept (analytical concept). Selective codes are the result of the next level of abstraction. It should be noted that the way selective coding is defined by Glaser and Urquhart, can contain all of the next three layers of conceptualisation in this study (selective codes, subcategories and categories). I just found it easier to call the starting level of this procedure selective coding, and then continue it to reach to the most abstract level possible.

![Figure 3-3: Conceptualisation layers, adopted from Glaser (1978) and Urquhart (2013)](image)

It should be mentioned that writing theoretical memos was a vital analytical process that happened especially during the selective coding stages. It is immersing in data analysis and abstraction of concepts that enables the researcher to see possible relationships between categories and start theorising (Urquhart, 2013). In other words, it helps conceptual development and can be a wheel to push thinking forward (Bringer et al., 2004; Strauss & Corbin, 1998). Ideas even struck me in the early stages of open coding (Urquhart, 2013). I took note of all my memos from the early stages of analysis and related them to open/selective codes, if applicable, using Nvivo software. In addition, I took advantage of reflective memos to take notes of my thoughts during analysis. The notes were not directly related to theory building but could explain the procedures I followed to do the analysis, why I chose this way, and any biases I might have (bracketing memo as explained by Bringer et al., 2004)). Generally, it helped me clear my own mind about what I am doing.

64
In Chapter 7, I will explain how the findings of previous data collection stages were integrated into this final stage of analysis (refer to Figure 7-1, the overall analytical process). This showed the ability of GT to integrate and transcend various data collection methods, by conceptualising the data to an increasing level of abstraction (Glaser, 1978).

3.4. Conclusion

In this chapter, I discussed the overall research strategy and methods of data collection and analysis applied in the thesis. I elaborated the interpretive stance behind this study and its appropriate methodology, that is grounded theory. The data collection methods, including observation, documents, and interviews, were also demonstrated in terms of the approach, the reason for using them and the analytical procedures applied. In the following four sections, the findings that resulted from the analysis of these data collections are described to give a better flow to the process in which the theory emerged from data.
CHAPTER 4. Getting to know the shared care programme
(observation)

4.1. Introduction

As described in Chapter 3, observations (i.e., participant observation in this case) can help researchers gain inside knowledge of the social system by interacting with people and becoming part of it. Generally, observation is claimed to be a window to the real practice, rather than what is claimed or presented (Flick, 2009). It is not only concerned with visual data but it “is an experiential and interpretive practice that mobilizes all human senses” (Provenzo & Renaud, 2008, p. 4), and can provide a sense of the main issues in the context, that improves scrutiny.

The overall research question is: “How do patterns of behaviour in leadership and development of large scale innovations in a health IT context affect each other?” This chapter describes the first step of data collection and analysis dedicated to the observation process and its findings. As mentioned in the previous chapter, participant observation was required to build a foundation for the insight required to start purposeful enquiries of the innovation development process and leadership interactions within a grounded theory framework. I followed the three phases of observation described by Spradley (1979, p. 34), comprising descriptive, focused, and selective observations. I took descriptive notes, mostly in the early stages, to orient myself within the field. It allowed me to get to know the real roles of the actors, and to gain a superficial understanding of patterns of behaviour within the programme’s groups. Then, the following focused questions were applied to the observations to select the most relevant issues:

1. Who are the stakeholders of the innovation being developed by the shared care programme and how do they enact their role in the direction of the programme?
2. How is the innovation development process enacted in this initiative, and what are the meanings of its main concepts?
3. How do people perceive the development of the idea of shared care?
4. How would “interaction data” (Fairhurst & Uhl-Bien, 2012) describe the way programme is driven, within and across groups? (meanings behind relationships)

In the selective observations, I paid attention to areas that could provide examples for what had been found in the focused observations. It can be said that there was enough learning to enable me to enter other fields of enquiry and make sense of the language used, and organisational/institutional rules and relationships. My observations and experience of the stakeholders’ everyday work challenges
revealed that the shared care programme was politically sensitive (people tended to talk very cautiously about it). The awareness of their sensitivity then helped realisation of meanings behind people’s behaviour and what they claimed. It became a complementary part of data collection and my interpretations (Goulding, 2002).

4.2. Self-positioning

Before entering the field and starting data collection, there were a number of decisions to make that would set the methods for the observations. I needed to decide about where to observe and for how long, in accordance with the research question and objectives (Provenzo & Renaud, 2008). My situation as a researcher new to the context of New Zealand Health System, also affected the decisions. The case under the study was a good frame within which to learn about how current interactions between organisations were happening. The selected initiative was intended to integrate organisations from primary, secondary, and tertiary care with community services, patients and their families. Therefore, I had the opportunity to meet people across the sector and understand their relationships.

My background was in applications and their adoption in Iran, a country with a national health network responsible for provision of healthcare (via public hospitals and health centres), as well as education of medical/health professionals through publicly funded medical schools in universities (Mehrdad, 2009; Pakshir, 2004; Takian, Rashidian, & Kabir, 2011). In this system, the role of private health service providers is expanding, while out-of-pocket expenditures on private healthcare are high, and the role for GPs as the first point of service provision is being diluted (Takian et al., 2011). My previous study within that system provided me with a base knowledge as a grounded theorist, so as not be empty minded (Dey, 1993) as I entered a new situation. However, the advancement of New Zealand in innovation developments, and the cultural and structural differences between the two health systems, justified the necessity of conducting observations before starting with other methods, including interviews. Therefore, to accommodate this learning, the observations conducted followed a naturalistic approach. This approach allows social behaviours to be studied in their natural condition and settings, rather than in a controlled context (Flick, 2009).

I needed to expose myself to the context of the study as much as possible, to build a base knowledge of the culture, rules and facts that were driving the actions, and to be able to interpret meanings in relationships within the leading and management groups of the shared care programme. My interest in learning about meaning of relationships aligned with the relational lens or framework chosen to study leadership (section 2.3.2). Leadership, in this case, was studied in the relationships that were
collectively changing the health care system and defining a new order. Hence, being able to identify relationships that were influential in the process of leading the shared care programme required me to become familiar with the influences underlying people’s actions, and where they were coming from. This was not achievable without using a participant approach to observation.

4.3. Data collection and analysis

4.3.1. Data collection notes

As mentioned in the previous chapter, my participation within the shared care programme was through an academic group, involved with the evaluation of the shared care programme, from the university where I am studying (University of Auckland). The evaluation was looking into the development of the innovation, and its outcomes, to provide feedback to the leaders of the programme and help refine the process as it was proceeding. Therefore, my involvement with the evaluation team was a mutual cooperation. The aim of my study was not to assess the behaviours of leaders and managers, in other words it was not an individualistic study of leadership. Hence the observation had a low risk of causing unreal participant behaviours. I had been introduced by a member of the evaluation team and allowed to sit in on the formal meetings of the leadership and management teams (under the ethics approval gained for the evaluation study). However, my research purpose was explained to them. This involvement helped me identify key informants for my research.

As the observed people were all informed of the purpose of the researcher sitting in on their meetings and making field notes, mine was an overt observation (Flick, 2009). This removed any ethical issues associated with covert observation and established a level of trust between myself, as researcher, and participants for the next round of data collection (i.e., when I began to interview some of the same people I had met in the observations). However, as Adler and Adler (1998) suggest, it is best to minimise observer influence on the people who are observed and not manipulate or stimulate their behaviour. Hence, when I was sitting in, I tried to talk only when I was spoken to. The only stimulation was my constant note taking. However, as I was known to be a member of the evaluation team, it could have been seen as part of my role with the team, and so lessened the sensitivity to my observation. In addition, the observations were conducted over an eight-month, increasing the possibility of coming to be seen as someone on the inside, and not an observer. The duration of the observation phase also helped improving validity and reliability through multiple observations, as discussed by Adler and Adler (1998). There were more chances to observe negative instances of
behaviour to improve validity, and observing patterns in different conditions and situations built reliability.

4.3.2. Interpreting and analysing notes

After each session, I wrote up my notes as soon as possible to complete and review what had been recorded. I was selective about what to observe and record. For instance, I took notes of key points in the discussions that indicated how people from different organisations tried to affect the decisions made, as these observations were valuable for the focused questions for my research. On the other hand, I did not write the details of technical and operational issues mentioned or the meeting agendas, as these were less relevant to my focused questions. This selectiveness has been criticised as a limitation of observation (Goulding, 2002). However, the focused questions for this stage directed the observations and led the note taking process (Spradley, 1979).

My observations aimed to directly address Question 1 (refer to section on observable facts). To answer Question 2, I used Van de Ven and Poole’s (1990) framework for exploring innovation development processes to narrow down the observational data in answering the question. I reviewed my notes and memos, in addition to the available meeting documents, with a focus on ideas, people, their relationships, outcomes, and the context of the shared care programme (Van de Ven & Poole, 1990). The framework helps understanding of how the process of innovation development unfolds. It is not about causal relationships nor workflows or decision making processes; it is a process view, as what “unfolds change over time” (p. 313). As suggested, observing innovation as it developed from an idea to concrete reality, enhanced my chance of detecting influential sources and changes that were affecting the process. It also helped to unfold the innovation type, when the emerged concepts were compared against with literature. The emerged concepts became “sensitising concepts” that helped in exploring the innovation development in the next data gathering cycles, within the grounded theory approach (Glaser & Strauss, 1967).

After organising my observational memos and identifying the emerged concepts in relation to the questions, I found what Cunliffe and Eriksen (2011) explained as abduction, as a type of inferencing, helpful in interpreting my findings. Abduction can be used to draw inferences about people’s perceptions regarding the innovation development process (Question 3), and the meanings behind leadership relationships (Question 4). Hence, I used the abduction strategy to study relational leadership here (Cunliffe & Eriksen, 2011, p. 1431) by “an iterative process of reading and re-reading data, looking for ‘surprises’ by seeking ‘out unexpected data and creat[ing] new concepts to explain them”.

69
I applied this method and wrote my reflections, in a process described by Mann, Gordon, and MacLeod (2009), to explain the surprising concepts emerging from my observations. Abduction is a form of inferencing used to best explain the available facts by going beyond logical associations and trying to take on what is implicit or explicit in data (Douven, 2011). Therefore, it appeared to be a useful way of connecting what was directly observable, to my later interpretation of possible meanings behind relationships. It could then be a source of theoretical sampling in the next stages to verify these inferences. The validated inferences (by finding other instances of them in data) can be included in the theory building.

4.4. Observed facts

The observations started two years after the programme’s commencement, when it was in the middle of expanding its implementation from a small scale trial to include more primary care practices and secondary services. The shared care programme had passed through conceptual development, and trial phases, and was in its iterative implementation and expansion phase.

I attended 18 meetings in total including 12 project management meetings, three leading and governance meetings, one public seminar, and two feedback/evaluation meetings. The shared care programme was initiated in May 2010 by NHITB, the ministerial committee responsible for leadership and governance of national Health-IT initiatives. The programme, which focuses on management of health for patients with chronic condition, gained momentum when three DHBs got involved in early discussions and national consultations about the current model of care, and the need for an integrated approach for delivery of services became recognised. The DHBs agreed to partly fund the programme with NHITB, and participate in the implementation and testing of the programme in its first phase.

The number of people and organisations involved changed and grew in these stages. Leaders and representatives from different organisations were directly and indirectly involved in the programme as decisions were made about contributing to, and implementing, the programme’s IT tool in their region. That is why membership in this programme can be described as flexible and cloudy, rather than fixed and clear. The decision makers included managers responsible for primary, secondary and community services, healthcare professionals in leadership and management positions, and financial and business services. Later on, the fourth DHB in the Auckland region started to get involved through a customised implementation of the initiative. This involvement was backed by partial involvement of one of their clinical managers in the leadership and governance group (group A) of the programme.

The meeting notes and reports circulated at the time of observation reflected how the size of the programme and number of people involved with innovation development was expanding over time.
Apart from the organisations involved for leadership and management purposes, healthcare organisations adopting the innovation, and accepted to be part of its trial, varied in their level of engagement. Below are example statistics that indicate this expansion and adoption rate from the early stages of implementation:

- In 2010: establishment of group A for leadership and governance, a managing company was contracted for project management, the evaluation of vendor proposals and the outcome of programme by an academic group was authorised, and a vendor selected
- By Oct. 2011: 8 GP practices, 4 secondary care services, 3 pharmacies, 74 clinical users and 51 patients were involved
- By Nov. 2012: over 200 clinical users (20 GP practices, 15 secondary care services, 10 pharmacies), collaborating in parallel initiatives such as an agreement with pharmacies to provide a service for shared care patients, and enrolling more than 400 patients
- By Sep. 2013: 25 GP practice, 20 secondary care services, 18 Pharmacies, over 850 patients

The evaluation team were constantly reviewing the programme in terms of clinical outcomes, and economic, technologic and social aspects. They attended meetings of group A to give feedback on their findings and receive ideas about future directions of the programme. They also were working closely with a project management group led by the managing company (group B).

**4.4.1. The managing company: group B**

The managing company was responsible for management of the project, including the development of the IT tool, implementation of the pilot, and adoption. The discussions in group B’s meetings were mostly around agenda setting/scoping, deciding about functionality issues, planning for users’ adoption, and gaining support for the innovation. Members of the managing company directed and led the meetings for project management. The group B meetings I attended were held in the managing company’s office and included representatives from the managing company, the process change, training and support teams, technical developers (vendor), user requirement and workflow teams, and the evaluation team. On average, seven people would attend the meetings. I realised that there were other sub-groups that were supposed to focus on issues raised (e.g., communicating with healthcare organisations for adoption of the innovation, or defining users’ requirements) and then report back to group B.

A closer examination of the attendee profiles for each meeting indicated approximately equal numbers of higher level managers from the managing company and the technology provider. However, only one or two people of the seven attendees at each meeting were familiar with the
technical aspects (the product). The low number of technical people belied the fact that many of the discussions appeared to be around technical issues. This makeup of the meetings can be explained by the fact that they were high level project management meeting, that were not intended to be dealing with detailed technical issues of the product. Yet, their discussions could flag an issue for the “agenda setting for management meetings” to be explored later (if it appeared to be influential in the progress of the programme).

4.4.2. The leadership and governance group: group A

Group A was the very high-level governance group leading the shared care programme. It was formed in the early stages to be responsible for overseeing and directing the programme at the national level. Later, people described how the focus and scope of work gradually changed to become leading and governance of the DHBs involved in the innovation in the Northern region. Membership of group A was not fixed; as people left the group, new members came along. The overall combination, though, seemed to consistently represent the variety of stakeholders involved (see Figure 4-1). It included managers and leaders from PHOs and DHBs within the Northern region, doctors, nurses and specialists who had academic or practical experience with the new model of care, patient (or as it is said consumers) representatives, group B (management) representatives, the IT vendor and the chair (from NHITB).

There were also invited members from other relevant organisations (e.g., leaders of relevant initiatives or from the Ministry of Health) who could possibly help to position this initiative within the bigger picture for healthcare programmes, or integrate it with other relevant Health-IT projects. Figure 4-1 summarises group A and B memberships and their relationships with other teams and organisations across the health system. It can be seen that the managing company had a central role in communications across the initiative, and within the sector.
Group A’s meetings were held approximately every 45 days and lasted around 4 hours. The observed topics in the discussions included:

- Reports of the project management team (group B)
- Discussions about issues raised in the reports from group B
- Stakeholders’ viewpoints of the innovation (e.g., Clinical users’ experience, patient concerns, health organisations’ issues with the change, evaluation team reports)
- Guidance for group B on detecting risks and opportunities
- Decision making on the scope, resources, and strategies for better adoption
- Finding useful network links
- Reviewing goals and plans
- Hearing about the challenges being experienced by the vendor and discussing the way forward, plus reviewing their performance

As might be expected, the presence of vendor representatives in group A could be challenging. One strategy to facilitate open discussions around the vendor’s performance was to ask them leave the room while specific discussions and decision making occurred. On the other hand, the vendor had the opportunity to present their challenges and the reasons behind the issues raised, or their organisational decisions in response to the emerging changes.
The representatives of patient perspectives and concerns were members of an existing group within NHITB, called the “consumer panel”. The panel had been established to provide consumer perspective to the NHITB and related working groups on initiatives for the realisation of the NHIT Plan (National Health IT Board, 2014a). They were people with different health conditions and from different age groups, that would use their own experience, and that of their networks, to reflect the patient perspective. Their involvement seemed critical for this programme, as one of the main concepts of the innovation was “patient-centred care”. This concept is abstractly defined in the literature as a commitment to change the model of care to facilitate better quality care services that emphasise patient needs. It can be described as care that responds to what patients need to know and their health concerns, considers the whole person and the social needs of the patient, discovers the reasons behind the problems, improves prevention and the relationships between care providers and patients (Little et al., 2001; Stewart, 2001).

A 2012 review (Kitson, Marshall, Bassett, & Zeitz, 2012, p. 4) reveals three themes in studies around patient-centred care: “patient participation and involvement, the relationship between the patient and the healthcare professional, and the context where care is delivered”. These aspects may not be given equal weight by the various groups of stakeholders who claim to be working toward patient-centred care. Patient involvement in their care refers to how their individual needs and preferences (medical and social) should be centre in their care planning. In terms of relationships between patients and health care providers, the highlighted points include respect and good manners, communication of knowledge, expertise, and cooperation between the care team members (Kitson et al., 2012). Within the research on patient-centred care focused on the context, issues such as patient rights and responsibilities have been discussed, along with the resources required to realise the promise of patient-centred care and turn policy into practice (Kitson et al., 2012).

In the next section, I reflect on my observations of the interactions and discussions of stakeholders, interpreting them in relation to the following themes: how they can be seen in leading patient needs, improving patient relationships with care professionals, and providing a facilitating context. A point about the patient perspective, which needs further investigations, is that the evaluation team were the main contact point with patients to get their feedback on the programme. This could have played a role in how patient voices influenced the direction of programme.

Doctors and nurses who had been practically or academically involved with the main concepts of shared care were other members of group A. At the time of the observations, there were four doctors and two nurses in the group. However, it appeared that there was even more domination by doctors in the early stages (i.e., six doctors and one nurse in the beginning). The reason behind this change in
the balance of numbers and the dynamic of each of the professions in the strategic direction will be explored in the next stages of the study. Two doctors (1 GP and 1 specialist) were known as champions, as they took a leading role in using and promoting the innovation among their network and were contributing in finding strategies to respond to clinical requirements. Managers from DHBs and PHOs and also evaluation team members made up around five members in total. At the time of observations, one member from the vendor side, two from the managing company and three patient representatives were attending the meetings as well. There was also one invited member from the Ministry of Health who was the manager responsible for programmes around Long Term Conditions, the area of focus in the shared care programme.

The last factor that could be explored in further enquiries is that there were people from outside the geographical area (the Northern region of the North Island of New Zealand) involved with the implementation of the programme. It would be helpful to know the reason behind their involvement, and perspectives on their potential influence in the programme. It may have been related to the change in the scope of the programme from national to the Northern region, as discussed earlier.

Stakeholders of a project are defined as people or groups involved in a project, having an impact on the outcome, or who are affected by it (PMI, 2008). Therefore, through the observations I came to know more about the stakeholders of the shared care programme: the Ministry of Health (including NHITB), DHB and PHOs and other community health services involved, group A and group B, the managing company, patients and their representatives, clinical and administrative users, the evaluation team, and the IT vendor. In the next section, I will use the observational data to answer Question 2 for this chapter, regarding the main concepts of the innovation and its development process. In addition, I will present my interpretations and reflections to answer Questions 3 and 4 which focus on people’s perspectives and meanings behind relationships.

4.5. Reflections on my observations

I applied the Van de Ven and Poole’s (1990) framework to answer focus Question 2 of this chapter. The field notes taken and the meeting documents reflected how the innovation was being developed, and what its main characteristics and properties were. The emerging concepts unfolded the innovation type when compared against the literature. I will present the findings in a way that reflects my early understanding of the messy interactions’ data (data about interactions) regarding the innovation development process, and its main concepts.
4.5.1. Innovation development

The first area to focus on (according to Van de Ven) is the idea. The discussions within the leadership and management groups, and even user forums, revealed the properties of the main idea associated with the shared care programme. I realised that there was an emerging idea building on top of the basic idea raised in the preliminary discussions in the DHBs. People who were champions and promoters of this idea were not able to articulate a fixed comprehensible explanation of what shared care meant in practice. They talked about an unpredictable future, as the idea was supposed to be hammered and shaped as it was being experienced by its innovators and early adopters (Rogers, 1995). Therefore, there were multiple perceptions among people, even leaders, about the main concepts of this innovation. The following concepts indicate how the idea was outlined based on the observational data.

Need for change in the process of care

One of the concepts in the observational data appeared to be the need for change. This change was associated with an existing unsustainable model of care and a desire to improve quality of care especially for patients with chronic conditions, who were the target group. These concerns had been raised in the preliminary discussions across the three DHBs, and the NHITB had acted upon the emerging needs. Although the preliminary intention was to bring a large scale change into the health system, the scope of work was narrowed and the degree of change became dependent on the organisational decisions.

The current model of care for the patients with chronic conditions was reliant on the patient in their interactions with care providers. It depended on patients’ ability to explain what had happened to them in other care settings, to know their medications, and to communicate their care plan with multiple care providers. Care providers communicated mostly through referral letters, discharge summaries, prescriptions, and phone consultations.

At the beginning of the shared care programme, existing programmes were primary-care based. They aimed to improve patient engagement and self-management, and sought to structure the behavioural change needed (Ministry of Health, 2004; Ministry of Health, 2012). The remaining problems were in coordination between care providers, and integrating health information gathered at the primary and secondary care levels (Ministry of Health, 2012). The shared care programme addressed the gap of the technological platform required for this communication. It required health care providers involved with care of a patient to change their way of practice, their relationships and their thinking about
patient needs. This formed a basis for another main concept raised in the programme: the shared model of work.

**Shared model of work**

The programme was defined around the concept of shared care that then required a new and shared model of work. The discussions within the observed meetings and forums revealed people’s interpretations and perceptions of this concept. They talked about shared information, shared responsibility, improved communication, and realtime data. As there were issues raised and repeated debate around this concept, even in the later stages, it can be seen as an ambiguous concept that needed to be defined clearly until it became a concrete reality.

Information technology provided the vehicle by which current shared care activity could be lifted and operationalised to a new level of integration and connectedness. Integrated care and connected care were other terms used to refer to the promises of this shared model of care. Other initiatives that worked on a similar concept of shared care provision were sometimes referred to in the discussions to clarify the vision, by elaborating on their differences and similarities. For instance, one of the initiatives focused on making available, across different health care settings, a summary of patient Electronic Health Records (National Health IT Board, 2015b); the other was sharing patient information summaries from GP Patient Management Systems (PMS) with other health providers, mostly for after hours services or Emergency Departments (EDs) (National Health IT Board, 2015a). It was apparent that the sharing of summary health information was one of the main benefits considered for the shared care programme.

**Integration and patient-centred care**

As outlined in Chapter 1, integrated care refers to seamless care from the patient’s viewpoint in their encounters with different points of care (Rea et al., 2007). In its broader definition, social care and conditions that can affect the health of a patient are also included. The idea of integration between services was discussed among leaders of the programme to help converge perceptions among members. It became apparent to me that social services were not included in this implementation experience. This could be due to complexity of the process of change. The integration, then, was supposed to be achieved by communication among health care providers in secondary/tertiary services, general practices, pharmacies, district nursing services and allied health services. District Nursing services provide nursing-led health care for patients who are at risk and require monitoring and care services beyond what general practices can provide (Ministry of Health, 2011b, p. xi). Allied health providers include dietitians, occupational therapists, physiotherapists, psychologists, and social
workers who work directly with patients and their families to support their physical and mental health needs (Waikato DHB, 2015). However, at the time of observation, allied care services were not involved with the programme.

The outcome expected was to enable the various care providers for a patient to all be on the same page in regard to the patient’s care. This was an example of putting patients at the centre. Patient-centred care is the concept associated with integration of services that focuses on shifting power from providers to patients (Kitson et al., 2012). It can result in better management of health conditions by empowering patients and enabling them to be more active in their care process. In a patient-centred model of care, the patient should be the primary decision maker in defining what will be the more important goals to be achieved by the care plans. It requires them to not only be informed about their condition but also be able to actively interact with their care providers to direct planning. These concepts have been covered in the literature and are not an innovative aspect of this programme. However, they were intended to guide a new way of working through communications, via a new IT platform. Therefore, they needed to be clearly defined and agreed upon among stakeholders.

The IT platform (the tool)

In an integrated health system, patients should feel they are dealing with one care provider who knows everything about their health and their action plans. Patients do not need to repeat themselves and remember what medications have been prescribed to them. These benefits could be achieved if patient health information can be transferred from one IS to another across health care settings, providing realtime data for care providers. In addition, it allows multiple care providers talk to each other to come up with the best care plan, especially when facing comorbidities. These benefits were the ideas driving the development of an IT platform for communications between care providers and patients.

The IT tool was developed with basic (minimum) functionalities to enable patients and care providers to begin communications, and to try and define what it means to work in a shared model of care. This aspect of the innovation can be called product innovation. It was being developed by the selected IT vendor during implementation and testing of the programme. The IT tool aimed to provide a web-based platform that clinicians could access from their existing ISs using an authentication system (login). Patients were also to have access to this IS through a patient portal to enable them to communicate with their care providers, ask questions of them, receive general health information online, input their health measurements and conditions from home, and show their health information to their family.
The development was intended to be accomplished by user contributions in defining their expectations of the tool, and their exploration and agreement on emerged workflows.

**Confusion**

Turning now to Van de Ven and Poole’s (1990) framework, I reviewed my memos to reflect on people in this innovation process. What could be interpreted from the observational data was that people were indicating their confusion in figuring out the new model of work. For example, there were notes about leaders in groups A and B expressing their concerns about not having enough involvement from users to help identify various primary care/specialised care propositions for designing the shared model of work. In addition, different groups were approaching users to get them involved, or ask for their feedback (e.g., evaluation team members, the vendor’s business analysts, and consumer and project management representatives in the user groups). This could be seen as a source of confusion for people trying to realise their role within the innovation development process. This point connects with the next focus in understanding innovation development process, i.e., relationships, as based on Van de Ven and Poole (1990).

**Co-construction of the idea**

One of the main concepts arising from looking into relationships between people involved in the innovation was co-construction of the idea. The idea of shared care was raised in the mid-levels of the New Zealand health system (DHBs). The observation indicated that people within the programme’s executive teams were not trying to solve the problem raised on their own. The approach taken was to co-construct the abstract idea with the contribution of clinical and administrative users of the outcome of the innovation. The complexity of this job was apparent as the development of the innovation depended on its potential users. This characteristic of the shared care programme was the theme in a number of meetings (especially in group A). It prompted questions about the handling and leadership of this programme by its potential users. This formed part of the enquiry in the next data gathering cycles.

One of the aspects of this co-construction was to indicate how care planning should be carried out in the new integrated system. Care planning is an evidence-based approach defined as the use of a structured, comprehensive plan, developed by patients and their families, and their healthcare providers together (Lawn & Battersby, 2009). It has been used to support a shift in the current model of care (episode and event driven) toward longer term planning and goal setting. Inherent in this approach is the broad whole of system approach described by Washburn (2002), by which various organisational entities or stakeholders (even customers) need to not only view the desired outcome,
but also be inside the process so as to be part of the outcome solution thinking. Although shared care and care planning existed in theory and practice (Wagner et al., 1996), the new IT platform under development provided new opportunities for care providers and patients to leverage the existing model and change their interactions and behaviour.

It could be implied from the observations that patient perspectives were being considered regarding their experience with the new model of care, and their interactions via the new IT tool provided for them. However, it was not clear whether their feedback was taken and applied in order to define the new process, or only for evaluation purposes. It should be noted that exploring patient perspectives and experience was outside the scope of this research, and the interpretations were based on participant interactions or descriptions of patients’ status within the patient-centred model. Overall, one aspect of this innovation was the process innovation type being developed through co-construction. The way this process was led seemed to be complex and unclear, and required further theoretical sampling.

This co-construction theme was also seen in the product innovation. The vendor had a ready market for their product and did not need to struggle with the commercialisation stage. However, they needed to understand user requirements as they emerged, to reflect on the feasibility of changes, and to apply them to the software platform. The product development and adoption issues seemed to be both the programme executives’ and the vendor’s concern. Thus, it can be said that the pressure of working on the three streams of development, adoption and commercialisation was spread between the different organisations rather than falling to the IT developers alone.

Furthermore, the movement started from discussions within the Auckland region DHBs where the NHITB took the step of initiating the programme in collaboration with the DHBs. This approach can be interpreted as a middle-out approach in the implementation of a change in the New Zealand Health System (Bowden & Coiera, 2013), because it applied “locally driven investment and solutions to deliver on national goals” (p. 5). A middle-out model takes advantage of a bottom-up model in conjunction with having a central leadership body providing the strategy (Bowden & Coiera, 2013). The role of the NHITB and group A as a central leadership/management body required further investigation.

In summary, the relationships contributing in the co-construction of the process and product innovations were considered important probing topics for the next stages of the study.

Informing and learning

Other relationships found during observations were seen in informing users about the progress and adoption status, communicating the vision and reminding them of the ongoing change, and discussing
issues around adoption (e.g., usability). This informing and learning theme was also found regarding the programme relationships with another similar initiative that was using the same tool. The tool was developed and used slightly differently for management of collaborations between care providers involved with care of patients with high needs (New Zealand Trade and Enterprise, 2013). It was implemented in a region in the South Island of New Zealand with different organisational characteristics (e.g., one DHB instead of three) and a different context (in terms of local health system issues and priorities). The pilot (test) implementation of the system in that region was occurring at almost the same time as the shared care programme (March 2011). Obviously, there were individuals from the technical teams involved in both project teams. Hence, understanding the relationships between these two initiatives, and the potential influence of the Canterbury Initiative on the shared care programme, was another potential theoretical sampling point or probing question for this research.

The outcome

The outcome (Van de Ven & Poole, 1990) of this innovation development for patients (as a group of users of the innovation) would be in the form of a new health service. As mentioned earlier, there was a separate Personal Health Record (PHR), or patient portal, developed for patients to access their health information and communicate with their care providers. The promise of the new service was to improve quality of care and provide the opportunity for people to be more active in management of their health conditions. It can be called a service innovation, and was the last component of the innovation under the study. The service targeted a group of patients who had been involved with other chronic condition management programmes (such as Care Plus), or indicated a high risk for unplanned readmissions.

It could be implied from the observations that there was a low diffusion of innovation in all aspects. The discussions and reflections in the reports were signalling perceptions of low value from patients about the new service. It seemed to be a challenge for the evaluation team to define how the outcome should be measured, and then shown to the potential users. Hence, it could have been an indication of an association between low adoption rate, and the evaluation of the innovation as it was being developed. These points emerging from looking at the outcome of the innovation development, needed to be explored in next stages of the study to find their influence in the progress and direction of the initiative.
Powers in the Context

The last focus area for observation of this process was the context of the innovation (Van de Ven & Poole, 1990). The DHBs’ role in the main leadership/management decisions, and their power as both funder and provider of health services, plus individual doctors’ roles in primary care were the properties highlighted in the early stages regarding the context. The notes taken about the context-specific issues led to new questions for further theoretical sampling. For instance, the role of nurses was apparent as less important in the early stages (fewer representatives in the leadership/governance teams), while emerging issues and learnings from the implementations highlighted their specific influence in the direction of the programme. Potential question would address the doctor-nurse power dynamic and its impact on their ability to take on leadership roles in the innovation development. In addition, the discussions in group A revealed existing conflicts between shared care goals and other goals and priorities defined in the health system. All these questions needed to be pursued and explored if the flow of emerging concepts justified their relevance.

4.5.2. Hybrid innovation

As reflections of the observations revealed, the shared care programme indicated three aspects of innovativeness: process innovation, product innovation and service innovation. The approach taken was similar to the “hybrid model” of innovation development (Baldwin & von Hippel, 2011). Baldwin and von Hippel (2011) looked at innovations through a collaboration frame. They described the first known group of innovator organisations as “single non-collaborating firms”, that produce an innovative product to sell (producer mode)(p. 1399). This can be seen as the model for the product innovation in the shared care programme.

Another type of innovator group, predicted to become more common in the future, are open collaborative (Baldwin & von Hippel, 2011). In this model, individuals and their collective knowledge contribute to the development of the innovation and the result is open to anyone (Baldwin & von Hippel, 2011), such as in open-source software developments. The collaborators are not business rivals, nor do they intend to sell the output. The process aspect of the innovation in the study programme followed a co-construction approach that could be described as an open collaborative model of development. Finally, a single-user innovation model refers to designing the innovation inside organisation to be used by its own people. This could be applied to how the service innovation was treated in the shared care programme.
The point is that all of these modes of innovation development have associated best conditions of application. Baldwin and von Hippel (2011) argued that each model of innovation is viable if the net value of innovation (after reduction of costs related to production and transaction) is more than the aggregated cost of design and communication. In a case where the cost of design (“the instructions that when implemented will bring the innovation into reality”) (p. 1403), is high and the communication cost (“transferring design-related information among participants in different organizations during the design process”) (p. 1404) is relatively low, an open collaborative approach is more viable (i.e., a cheaper design). On the other hand, a single-user innovation is independent of communication costs because the design happens within the organisation. Therefore, if the in-house design cost is less than the value produced, it becomes viable. In the producer model, both communication and design costs are higher than for the other models. Therefore, the producer needs to have an anticipation of the customers’ willingness to pay and market share to decide if it is viable to begin innovation development (Baldwin & von Hippel, 2011). A more realistic approach is to consider a hybrid model of the three possible options. This may provide a platform for innovation delivery where costs are lower and the network effect (Katz & Kahn, 1978) is added in. The network effect means in some industries, especially IT, the number of adopters of an innovation impacts positively on the willingness of new people to adopt.

The product innovation in the programme followed a producer model in which the developer (vendor) sold the tool developed in-house to DHBs. Their involvement in the programme (being part of leadership group) provided them with a low-cost source of information and an experimental site to test their products and thus lower the design cost. In addition, the programme took an active role in marketing and commercialisation of the product and also entered into a contract with the vendor based on an agreed percentage of the populations within the DHBs. Thus, it lowered the communication cost for the vendor to sell their product and guaranteed the customers’ willingness for them (Baldwin & von Hippel, 2011). Therefore, it could justify a producer model for the vendor, for the product innovation.

The process innovation was developed (designed) with lower costs than would have been the case for a single-user model (Baldwin & von Hippel, 2011) had the vendor and the programme teams intended to develop it on their own. The communication cost (with users and innovators) was expected to be low and the benefits of engaging users was predicted by other similar initiatives around the world (e.g., in the UK’s NPfIT, (Altmann & Michael, 2011)). Therefore, the open collaborative approach was selected for the development of a new model of care that was open to the contributors.
For the service innovation, the design costs of an improved service for patients who needed better management of their own care was justified because of the high costs imposed on the health system through unplanned readmissions (Silow-Carroll, Edwards, & Lashbrook, 2011). In addition, the cost of designing a new service for each service provider could be low. However, the communication cost to design the improved service across multiple health organisations might be relatively high due to different procedures and requirements for each organisation. Therefore, it could explain why the shared care programme followed a single-user approach and allowed each primary/secondary care organisation to make decisions about the way the new service was going to be developed for their patients. Another potential source of enquiry was to understand how the new service development was led. However, it should again be noted that understanding patients’ experience and influence in this programme was outside the boundaries of this study and thus I did not follow this line of enquiry. This should be seen as a limitation of the study.

4.5.3. Possible meanings behind relationships

Using what Cunliffe and Eriksen (2011) explained as abduction, helped me draw inferences about people’s perceptions regarding the innovation development process (Question 3). It also led to finding possible meaning behind relationships that could identify the influential relationships (Question 4). These preliminary insights about leadership relationships needed to be pursued in the next stages to be validated. In fact, at the first stage of getting to know the shared care programme and its context, the data was puzzling and making sense of these puzzles could not be completely achieved based on a few months of observations. As mentioned in the Introduction chapter (see section 1.3.2), this study of leadership relationships followed a social/relational framework (Uhl-Bien, 2006). Therefore, the inferences, in this section, were drawn by looking at areas such as controls in decision makings, mobilising points and relationships (Fairhurst & Uhl-Bien, 2012). What follows is an outline of the inferences regarding perceptions and leadership relationships.

4.5.3.1. Decision making patterns

As mentioned in section 3.3, group B was responsible for project management activities. In addition, as mentioned (see section 3.4.1) people were confused about their roles as there was not a clear distinction about who was responsible for process change and user requirements. In other words, people could take similar roles (e.g, the IT vendor or a consultant working for the managing company could both try to analyse the change process). This could have an effect on how change was led within the programme. However, at this stage the data was not sufficient to support this inference. Thus, it is left for the next sets of data collections to validate the potential effect of unclear responsibilities in the leadership process.
Power imbalance in alliance

The pattern seen in the project management meetings indicated a controlled model of decision making as the managing company directed the scope, the tasks, and the direction of the discussions. This can be associated with the fact that the managing company was owned by the Northern Region DHBs and a government organisation (Health Benefits) to provide shared services and decrease IT procurement and non-clinical costs in the Northern region. On the other hand, people in the field facing change implementation took some control of the innovation, making it a more collaborative way of decision making at some points.

The interactions among members of group A seemed different. Rather than explaining what had been achieved and what should be done in the next step, the discourse tended to provide questions and facilitate collaborative exploration of risks and opportunities. Meetings could be seen as short brainstorming sessions over issues raised by the project management team or clinical champions who had hands-on experience with the innovation. The chair also contributed in directing the sessions, reinforcing the main objectives, and facilitating the decision making. Therefore, a less controlled (more collaborative) decision making pattern was observed in group A. It was an indication for where influential relationships might be found in this programme.

The influence of group A and their decisions on the executive bodies of the programme seemed to be mostly through the project management representatives (group B), and the documents (meeting notes and discussion papers) transferred to the group. The discussions were relayed back to group B in the form of advice on implementation and adoption issues. This could have allowed a degree of control for other teams, including group B, in solving the lower level problems and responding to emerging issues. It was then informing for the purpose of this study, to explore how the advice given was reflected and applied in lower levels.

In summary, what was seen in group B inferred that an alliance had formed allowing stakeholders involved in the project management and adoption processes to collaborate. However, putting the managing company in a higher authority position, or, in other words, giving them a legitimate power (French & Raven, 1959; Safari Mehr et al., 2013, September) created a power imbalance. The influential powers appeared imbalanced in this network of relationships (Bolden, 2011; Safari Mehr et al., 2013, September). However, people who had better insight of one aspect of the phenomenon (e.g., support team members who worked closely with clinicians) had expert power (French & Raven, 1959) and could lead the direction of the discussions by allowing collisions or reinforcement of the ideas raised. It could be seen as a form of shared leadership that happens when different organisations form an alliance (Schweitzer & Gudergan, 2009).
Emerging control

What could be seen from group A and its influence on the programme aligned to governance, as described by Schweitzer and Gudergan (2009). The alliance formed in group B was to be controlled by a governance mechanism, and its various stakeholders were to be integrated into the governance process. The governance control was to indicate how to use resources and build relationships. This governance group was formed by sending invitations to a range of stakeholders and allowing them to send their Expression of Interest (EOI) for working in compliance with NHITB. Therefore, organisation such as the IT vendor had the opportunity to change their power in relationship with other health care organisations by sitting in this group. It, then, shaped a collaborative group, rather than a hierarchical governance structure that concentrates on resource allocation and holds a predefined plan for its leadership (P. C. Smith et al., 2012). In this case, group A seemed to have an emerging collaborative governance structure that led to emerging control for the direction of the programme.

This collaborating culture in group A, as a governance group, could potentially result in a collaborative type of leadership. “Governance is enacted through leadership”, as Alimo-Metcalfe (2012) states, in that, stakeholders (not leaders) interact collaboratively to discover innovative solutions for unpredicted governance issues. The result of these interactions can be seen as leadership. Finding whether such leadership relationships could be seen in other organisational levels of the programme, would be interesting for the next stage of the study.

4.5.3.2. Mobilising points

Apart from controls, looking at mobilising points that can influence a collective to act is considered a way of exploring leadership through a social lens (Fairhurst & Uhl-Bien, 2012). Observations indicated that programme members tried to gain support in order to survive among the existing Health-IT initiatives. Collaborators in group A indicated a range of “boundary spanning” activities to link with potential external collaborators, who had relevant interests with some conflicting goals (Steadman, 1992, p. 75). Therefore, people in groups A and B discussed how they could contact other key people (highly influential executives) in existing Health-IT initiatives to gain their support and collaborate around common interests. It could leverage both organisational positions within a pool of programmes that needed to obtain central leadership (NHITB) support too. This can be seen as another example of the middle-out (Bowden & Coiera, 2013) model of change management in the health system. NHITB was trying to lead and connect all the similar local/regional Health-IT initiatives under the National Health IT Plan (National Health IT Board, 2010), however the initiatives had their own strategies to direct this change.
Another mobilising point in relationships observed was in relation to risks and conflicts. Responses to risks and the way conflicts are controlled indicate patterns in leadership relationships (Alimo-Metcalfe, 2012). There were discussions around context-specific risks. For instance, they explored how it was possible to bring a large scale change in the health system while facing the risk of not developing a network effect in adoption of the innovation. They discussed different solutions to being able to engage GPs, who were potentially in the same geographical area of secondary services involved with this initiative, so that they would be more likely to refer a patient to the same services. Thus, they could possibly increase the number of care providers, engaged with one patient, enrolled in this programme (increased network effect, (Katz & Kahn, 1978)).

Another risk that resulted in actions was the fact that it would take a lot of time for such innovations to affect health outcomes and prove the benefits to the healthcare providers. This would influence the rate of adoption and decrease the network effect. In addition, this risk could affect policy makers’ trust in the innovation, thereby affecting funding of the initiative. All the risks were generating courses of action, decision making and new relationships. For instance, people in group B would form ad-hoc sub-groups to respond to the emerging requirements; they would also negotiate with other stakeholders’ representatives (especially in group A) about priorities in the actions. Occasionally, managers/leaders overemphasised deadlines and small faults. Then the relationships between groups (e.g., the vendor and project managers) tended toward frustrating discussions where each party tried to defend its actions. Alimo-Metcalfe (2012, p. 17) referred to similar problem in the NHS: “...managers under pressure to deliver on targets typically default to a command and control style, become insensitive and defensive”.

In summary, all the inferences about importance of relationships such as gaining support, building network effect, and proving the outcomes needed to be probed in the next stages to see if they were raised in the interviews.

4.5.3.3. Individuals’ perception of change

The last inference is about individuals’ perceptions of the innovation process. Observations indicated two main concepts for individual perceptions. Complexity was raised in the discussions and reports. Limiting the scope from a national scale programme to a region-wide initiative may have been associated with the complexity of work. Discussions that compared what had been implemented by the vendor in another similar initiative (Canterbury region) were linked to the complexity of the context in the Northern region (e.g., having three DHBs involved rather than one DHB).
In addition, the change, brought about by this innovation, was referred to as an ongoing process. Users (clinicians and administrative staff) needed to be involved in the process of defining a new model of work. It appeared that people expected the change to happen over a long period of time, through ongoing interactions between care providers and the programme teams. It was intended to become a large scale change by the end, but observations implied it could not be a revolutionary change. Finally, all of these concepts and inferences needed to be retained for further investigations in the next stages. They might be validated if many instances of them could be found in data, or might not be further explored if the next data sets excluded their relevance. It is in the nature of grounded theory data collection and analysis, to move with the direction of the data.

**4.6. Discussion**

The observations and the analysis of the findings answered the focused questions for this chapter. The first question was about stakeholders and how they performed their role. The findings revealed these stakeholders to be: the Ministry of Health, DHBs and PHOs and other relevant health organisations involved, group A and B, the managing company, patients and their representatives, clinical and administrative users, the evaluation team, other implementation and support teams, and the IT vendor. It could be seen that group A had a high level leadership and governance role, while the managing company was the central communication hub. The role of IT vendor was also leveraged by its involvement in the high level decision making group.

Question 2 was around the innovation development process and main concepts of the innovation. The need for change was the first concept reflected in the observations. The healthcare provision model, mindset of clinicians and their relationships with patients needed to change in this innovation. The shared care model, however, seemed ambiguous and needed to be defined clearly until it became a concrete reality. The other main concepts were integrated care and patient-centred care. It could be said that most of the interactions were more around the relationship between the patient and the healthcare providers, than patient participation and providing a facilitating context.

As part of the development, the IT vendor was involved with the product innovation, while taking the advantage of user contributions in the emerging workflows. This co-construction of the innovation, that was for both the product and process aspects, seemed to be contributing in the complexity of the development process. Evaluation of the outcome and its presentation appeared to be challenging and might have reflected negatively on the adoption process. All these observed aspects of the innovation development process needed to be explored and verified in the next stages.
The next question asked about people’s perception of the development process. The conversations indicated that the future could be unpredictable as the idea of the innovation was being developed according to the users’ experience of it. There seemed to be confusion about roles and responsibilities within the innovation development process as well. Some of the relationships in the development process were to inform people and learn about their experience of the innovation. Overall, it could be seen that people saw the complexity of the process and the ongoing change associated with it.

The last question was about meanings behind relationships to indicate the leadership aspect of the innovation. The interactions raised a question about whether the power dynamic between doctors and nurses had an impact on their ability to take on leadership roles. It also indicated that there was a power imbalance in group B, as the managing company was in a higher position. However, there seemed to be a form of shared leadership happening, when experts used their power in the direction of discussions within the alliance. There was an emerging structure in the governance group to allow collaborative decision making and provide control for the direction of the programme. In terms of leadership, this group was also trying to gain support to survive among competitors and respond to the risks and conflicts (e.g., providing the network effect, and proving the outcomes).

4.7. Conclusion and next stage

This chapter has presented the first reflections and inferences toward fuzzy exploration of the innovation of the shared care programme. It provided an understanding of properties of the innovation development process (using Van de Ven and Poole’s (1990) framework), and the type of innovation that was being developed in this programme. Possible meanings behind relationships that might be seen as leadership relationships were proposed (via abduction inferencing). People’s perceptions that were highlighted in observations could also identify or indicate other properties of the innovation development process. All of these findings needed to be validated and supported by the next sets of data collection to be able to contribute in the theory building at the end of this journey.
CHAPTER 5. Beneath the written messages

5.1. Introduction

In this chapter, the results of content analysis performed on a selection of the shared care programme’s documents will be presented. The questions to be answered by the content analysis follow, from narrow to general. The narrow questions (objectives) to be explored using a CATA (Computer-Aided Text Analysis) tool were:

- What are the leadership concepts in the texts?
- What are the distinctive themes and concepts in each phase of the project?
- What is the focus of each phase of the innovation development?

The results were interpreted and used as a source of constant comparisons (grounded theory technique) in the next stages of data collection and analysis. They also informed further data gathering points and enquiries. The following goal was more general and was inferred abductively from the responses to the narrow questions:

- What are the meanings behind these communications?

In fact, the question above reflected the general purpose of carrying out content analysis on communications in this case study associated with leadership. It was an attempt to understand the project team members’ written communication toward organising the change in the programme. As Johansson and Heide (2008) explain, in organisational change studies that do not follow the planned approach, communication is no longer just a tool to inform people. It is a social process in which people make sense of the actions (Weick et al., 2005). Therefore, the aim of this stage of the study was to learn about the sensemaking happening via the programme’s written documents. This aligns with my social view of leadership, as the sensemaking interpretations were a way of organising (Weick et al., 2005) that was part of leadership process (Uhl-Bien, 2006) for the programme.

Communication is sometimes confused with discourse (Fairhurst & Connaughton, 2014). “In communication, there is a dynamic connection among actors, action, meaning, and context, such that actions modify and elaborate existing connections or create new ones...” (Jian, Schmisser, & Fairhurst, 2008, p. 314). Discourse, on the other hand, is “language that is used for some communicative purpose” (Ellis, 1992, p. 84). The questions developed for this stage were to indicate the meaning behind communications and their sensemaking of actions in the programme, that would
then indicate the social constructions of leadership depicted in the texts. The aim was not to find the links between actors or analyse how connections had changed. The meaning inferring from this study of communications can be categorised as what Fairhurst and Connaughton (2014) describe as framing and sensemaking of trends in meaning-centred research around communications. In studying leadership, it seems crucial to understand how leadership actors make sense of the situations and act upon it, or how they frame people and situations (attach meaning to them) (Fairhurst & Connaughton, 2014).

Communication has not always associated with meanings as described above. Traditionally, communication has been studied to reveal how leaders influence followers (Kramer & Crespy, 2011), or how effective leaders are as communicators (quality of interactions) (Fairhurst & Connaughton, 2014). In a newer non-hierarchical view of leadership, communication is used to apply a shared model of influence. Tannenbaum, Wescbler, and Massarik (1961, p. 24) define leadership as interpersonal influence that can be directed through communications. The conception of communication in these views is described as the transmissional view by Fairhurst and Connaughton (2014).

In another perspective, leadership is not transmitted via communication but “Communication is a key element of relationally-oriented leadership” (Shamir, 2007). Uhl-Bien (2006) describes the focus of the relational perspective of leadership studies on the communication processes, in which social construction of reality is being made. Communication is considered as an emerging property to indicate what is applicable and meaningful (Cunliffe & Eriksen, 2011). Leadership relationships can be known by understanding meaning of communications that drive actions (Fairhurst & Connaughton, 2014).

In this study, I followed the approach described by Krippendorff (2004) to enable taking advantage of quantitative and qualitative data that lead to meaning-centred inferences about communications. I chose content analysis as it is a technique for communication studies but it is not concerned with observable entities. Other studies in communication might focus on behavioural expressions or individual characteristics, but content analysis aims to discover what lies beyond the observable data (Krippendorff, 2004). The data applicable for this analysis was not only texts of spoken or written documents, but could also be symbols, images, maps and even numbers. Learning about meanings behind the documents circulated in the programme and possible patterns of action of leaders was considered another dimension for adding insight, before delving into in-depth enquiry through interviews.
In the following section, the methods used to prepare the data and analyse them with the tool (Leximancer) are presented. The results of the deduction phase and abduction inferencing of the programme documents are then be discussed in the findings section. In the last section, a summary of the learning obtained and implications for the next stages of the study are presented.

5.2. Document analysis methods

The content analysis conducted followed Krippendorff’s framework and the six components suggested in its design (see Chapter 3). The narrow questions mentioned in the introduction were one of the components designed so that they could be answered through deductive inferences. The context of this analysis came from the knowledge I acquired during observations. The next construct included mini-theories, or if-then rules, as the bases for inferences (i.e., deductions). These mini-theories are embedded in the computational algorithms used by the Leximancer tool. For instance, the concepts were selected as significant words according to their frequency. If words or nouns co-occur in a predefined proximity (i.e., three-sentence long blocks) they are conceived of as being relevant/correlated (Beeferman, Berger, & Lafferty, 1997). Leximancer was developed based on psycholinguistics according to which a correlation is considered to exist between human learning and behaviour and co-occurrence of words in natural language (A. Smith & Humphreys, 2006). The last component was abductive inferencing, in which the answers to the narrow questions helped draw inferences to answer the overarching question for this stage; the meaning behind communications.

5.2.1. Documents preparation or unitising

A prerequisite of the deductive part of the process (using the tool) was preparing the texts and defining units of analysis that were of interest (Krippendorff, 2004). The first unit prepared was the sampling unit. It is “a manageable subset of units that is statistically or conceptually representative of the set of all possible units, the population or universe of interest” (Krippendorff, 2004, p. 84). The documents were selected from a pool of project documents available. As the project managers were concerned about confidential or sensitive information, they allocated a person to select the documents based on the research questions and the purpose of data collection. Therefore, one of the limitations of this stage was the subjective selection of the documents by a person outside the research. Her perception of the research question and sensitivity of the project documents may have affected this selection.

Apart from the sampling unit, coding and context units needed to be identified in the content analysis (Krippendorff, 2004). Based on Krippendorff’s explanations of different coding units, the appropriate unit to answer the questions for this stage was thematic distinction in combination with physical
distinction. Physical distinction divides data based on time, volume, size, or other properties of a medium, not by its meaning or information. To apply this coding unit, the documents were divided into three phases (three folders) based on the time phases of the project. This distinction was then combined with thematic distinction, as the documents were explored to select parts indicating a leadership theme.

Using physical distinction, I defined the three phases according to my understanding of the three different periods of the programme, according to changes in the focus of leaders and managers. The first phase, was the most conceptual phase in which the idea of the innovation was being described, communicated and largely developed (May 2010 to Jun 2011). The second phase was when a small-scale trial was implemented (Jul 2011 to Dec). The remainder of the programme comprised an iterative process of implementation and extension (Jan 2012 to Mar 2013). It was seen as informative to understand how the meaning behind communications changed across these periods.

To carry out the thematic distinction, I used the following inclusion/exclusion criteria on the documents. I reviewed the documents for leadership related texts, and applied the social lens used in this study of leadership (explained in section 2.3.2) as the inclusion criteria. By exploring communications depicted in the documents I aimed to understand relationships that were contributing in organising this change (i.e. leadership). Therefore, I included the text excerpts if they seemed to be relevant to decision making, direction of actions, values, attitudes, financial issues, new workflows, power sources, leaders’ and members’ interactions (exchanges), organisational structure (analysis and design), supporting other members, political decisions (coalition, advocacy), inspiring others and meaning making, building relationships, and focus/scope of work. The excluded parts, on the other hand, were mostly management focused such as monitoring (performance measurements, milestones, evaluation results), low level activities (plans, deliverables, progress), functionality issues, rewards and punishments, standards (doing things right), and risks (when not revealing general communication issues or other leadership related risks).

Turning to the units of analysis, context units are another element of unitising that needed to be applied along with inferences. Context units depend on the coding units and “set limits on the information to be considered in the description of recording [coding] unit” (Krippendorff, 2004, p. 101). Hence, I made inferences using the results of the deductions (i.e., the concept maps) and the context of data. For example to understand the meaning of a concept found in the second phase of the programme, I examined the texts from the previous phase to understand the meaning behind it. It is recommended to make the context unit as small as possible and as large as required to add
meaning. Therefore, in each concept, I reviewed one or two paragraphs that could directly add the contextual information to the analysis for making contextualised inferences.

5.2.2. Coding Settings and techniques

As part of this analysis, I carried out the coding using the CATA tool and my interpretations. I manipulated/refined the meaning of data (concepts and themes) according to my understanding of the documents and the context of the programme. I used different analytical features/techniques in Leximancer to answer the narrowed questions. First, I conducted a discriminating analysis over the entire data sets to reveal characteristic concepts that discriminated each selected phase of the programme. Later, I analysed and mapped each individual data set relevant to a phase to add to the richness of the former analysis.

Changing the settings and parameters in the software affects the results of coding. One of the changes that can alter the arrangement of the concepts is removal of stop words that are very frequent, such as ‘the’, ‘and’, or ‘is’ and which do not add any semantic value to the analysis. Having these words in the analysis results in generalised themes and subsume meaningful concepts, as the thesaurus learning associates them with a higher level concept. Apart from stop words generated by the tool, there were words in the concept list that were not of interest to the study and had low semantic value. Accordingly, I removed these words from the concept list (e.g., date, including, work, based).

Variations of words appear in the tool’s thesaurus of terms. The thesaurus also learns synonyms by searching within three sentence segments (blocks), as it is highly likely to find synonyms used in adjacent sentences. I also added synonyms to the thesaurus manually, as there were names that were used interchangeably for the programme and its affiliations, in addition to the synonymous terms in the health context (e.g., GP: general practitioner, doctor, doctors). I also fed the folders that held data of the three phases into the software and set it to indicate folder tags on the map, to see concepts and themes relevant to each phase.

One of the coding methods available in Leximancer called “profiling”, is useful for exploring themes of interest in large data sets, instead of all the concepts that can be generated automatically (Leximancer Pty Ltd, 2011a). It allows comparisons between data groups (phases). One of the techniques of profiling is discriminating analysis based on semantics. In this technique, the groups (folders) are discriminated by the concepts that are specifically connected to them. In the discriminating analysis, I needed to disable the ‘automatically identify concepts’ feature and set the tool to learn from the tags (i.e., folders). In addition, I set it to use concepts in each folder to distinguish folders/phases from each other (Leximancer Pty Ltd, 2011a). There are two algorithms to choose for clustering; in this case,
a “topical network” mapping was chosen as it was suitable for this discriminating analysis, where concepts (topics) depicted on the map were highly relevant/connected. It allowed the concepts to be spread out in such a way that their proximity would show direct and indirect relationships.

The last point is the justification for using discriminating analysis rather than an analysis over all the three phases in comparing the concepts and themes. The result of a normal analysis (automatic identification of concepts without setting up the profiling method) over the three phases revealed less information (refer to the findings section). For instance, in the second phase (Folder Jul 2011 to Dec) there were more frequencies of each term, with a probability rate around 20% for most of them. There was not a high likelihood for the concepts to be connected within this phase. Hence, it did not give meaningful explanation of what had been communicated. It did not show any emphasis or pattern in the discussions to reveal the meaning behind interactions. Whereas in the figures that hold the findings for discriminating analysis it can be seen that the counts of some concepts were relatively low, but the probability of appearance in this stage was high. This was informing about the way new concepts were introduced into the discussions and helped me make inferences about the leadership purposes behind it.

The next method used was individual analysis of folders that followed an automatic concept mapping with manual adjustments. To adjust the concepts created, in addition to removing concepts with low semantics, I merged some of them as they were synonyms in this case study, or were known synonyms added to the thesaurus list. I also combined some concepts to make compound nouns or terms (e.g., District Health Board), and renamed some concepts to apply the best term from the thesaurus list (such as deliverable instead of deliver), or put a title instead of a person’s name (e.g., the chair). These adjustments and re-clustering of the map were done iteratively to find a relatively stable concept map.

5.3. Findings

I explored the themes within the texts attached to them. The theme care was referring to health care, and the purpose of the programme in regard to quality of care and improvement of services. It could be seen that patients were the specific group of users for the innovation and were among the high ranked concepts. It indicated the attention given to this group in the communications. Support was the next theme and referred to what users required to be involved with the innovation development and to use the IT tool. Using the IT system was another theme connected to the leadership conversations. It signalled the role of physical entities (such as the IT systems) in shaping interactions that could eventually contribute in leadership. The theme group, was about groups involved in high
level decision making. This general view of the documents complemented the following findings (discriminating and individual analysis of the phases) in drawing inferences.

The findings are presented in two sections: discriminating analysis and the individual concept maps appearing in each phase. The overall themes found by automatic concept mapping of the whole data set (texts selected relevant to leadership) are indicated in Figure 5-1. It revealed the most highly ranked themes (high connectivity of the concepts) respectively as: care, patients, support, use, group, and programme. These themes only indicated main issues in leadership communications. It was more informative to investigate the nuances in different phases of the programme. The dynamics of relationships were of interest in the social lens applied for the study of leadership in this case study.
Figure 5-1: Automatic concept mapping of the whole data
5.3.1. Discriminating analysis

Discriminating what had been communicated about leadership in the programme’s documents for each phase, formed the next analysis of the data. Figure 5-2 is a snapshot of the outcome of the discriminating analysis for phase 1 (May 2010 to Jun 2011). The observable closeness of the circles is an indication of the real proximity of the themes and their direct and indirect co-occurrence (A. Smith & Humphreys, 2006). To identify the most connected concepts for this phase, I clicked on the relevant node (i.e., Folder 2010 to mid-2011) to highlight the links and see the ranked list of words and nouns that were highly likely to co-occur in the texts in the chosen folder (see the right hand side pane).

The most relevant terms appearing closer to the tag for this phase were programme branding, budget, shared care record, and the chair. The two circles with brighter colours (red and purple) indicate the themes most discriminated by frequent concepts (according to Smith and Humphreys (2006)): shared care record, and pilot. This phase of the programme included the very first trial of the idea and the basic tool within the minimum organisational settings required (at least one primary care and one secondary care service providers involved with care of a patient with chronic condition). Therefore, the theme pilot (referring to the test phase and proof-of-concept) was more frequently referenced. Shared care record, however was not expected to be a theme based on the observations. The observations indicated that shared care record was one of the features that could be developed to give patients, and their care providers, access to part of the patient’s health care record, to enable shared care. In the other phases this theme was not stressed (i.e., the circle was far from phases 2 and 3) as the most highlighted feature tended to be the shared model of care planning for the patient (rather than provision of an electronic health care record).

Looking into the terms with high relevancy helped in interpreting the results and making inferences. It should be remembered that the maps do not characterise what happened in each phase but indicated the themes that could discriminate the phases. Considering the narrowed questions and objectives explained in the introduction, the following meta-themes spoke to the narrowed questions and described the meaning of discriminating activities in the first phase. The most relevant concepts for Phase 1 are written in bold.

- Influential sources: **Budget** (finding sponsors that can provide funding required for development and test of innovation in this phase), vision, the **Chair** of group A, and the vendor.
Figure 5-2: Discrimination of themes for phase 1
• Presenting the idea: **shared care record** (the initial presentation of the main feature of the programme), **branding**, workshops (engagement of potential adopters and raising public awareness).

• Management (inception stage): Contract (between the managing company and vendor), pilot (the first small scale test), vendor.

Looking at the bolded concepts, and the themes attached to them, indicated that the leadership relationships discriminated in this phase were around influential sources and presenting the idea of the programme. It should be noted that there is a feature in Leximancer that allows re-clustering of words around new themes. It was useful to check how stable the results were by applying clustering algorithms. If there was no clear pattern in the clusters generated, the concepts might need revising. The new clusters generated for the above analysis indicated similar concepts and patterns for the themes.

The other analysis carried out to see the distinction between concepts and themes communicated in this phase, was for all the documents available to the researcher (not the documents selected for leadership exploration). It can be seen that the unit of analysis (sampling unit) affected the results. It seemed when the sampling was not narrowed down, according to the research question, the result was loss of some data in the area of interest, as the lens applied could result in other issues rising up. To get to the best resolution it was better to eliminate as much peripheral data as possible. Given that, looking into all the documents (using the discriminative concept mapping setting) led to the themes below.

• **Influential sources**: Vendor, stakeholders

• Innovation and Change Management: **Workstream 1** (clinical or business process design using feedback from the operational field), **Workstream 2** (technology design, test and planning regarding shared and integrated model), pilot, project, evaluation panel (responsible for evaluation of Expression of Interests from IT companies to be the vendor for the programme’s IT tool)

It can be seen that there were fewer concepts relating to leadership, than to change management and innovation, at this time. The meanings behind communications in Phase 1 seemed to be about change management and innovation development, rather than leadership (influential sources) which was less depicted in the documents. As mentioned, one possible explanation was the narrower sampling unit used in the first test. In addition, another possible inference was that the innovation needed to be
developed further to indicate the value that could be provided for users, and to reveal other influential sources that might affect leadership of the innovation.

The themes and the patterns seen in the second phase of the programme (Folder Jul 2011 to Dec) were different (Figure 5-3). Physicians and Network N1 were the closest themes in this phase. Network N1, that is the network of regional DHBs and PHOs formed to meet and facilitate integration of health services, appeared distinctively in the documents of this phase. The texts also indicated that physicians’ response to the idea and the tool were largely discussed in this phase. The terms and concepts raised, with high probability, as being the distinctive terms in the communicated documents included: HINZ (a national Health-IT conference), treatment, a primary-secondary care: Network N1, physicians, payment, milestone, and media.

Therefore, the following meta-themes were derived in response to the narrowed questions identified for this chapter:

- Networking and gaining support: HINZ conference, network N1, media, public, communication

- Clinical value: Physicians, payment, treatment, New Zealand

- Management (implementing change): payment, milestone

The leadership related themes turned slightly from talking about influential sources, to gaining support from relevant initiatives and organisations. The HINZ conference is an academic and industry conference that attracts a lot of businesses and stakeholders in the Health-IT field, and allows networking and raising awareness of the current issues. Public awareness also seemed to be high on the agenda in the communications. The management activities had also moved from the inception phase to the implementation of change. Figure 5-3 indicates another concept map (as in Figure 5-2) with the list of ranked terms for Phase 2 (i.e. 2011 Jul to Dec).

Discriminating analysis of the whole documents from phase 2 (not the documents selected for leadership) depicted similar patterns (see the similar themes in the next bulleted list). It seemed networking, creating clinical values, and controls were specifically communicated in this phase. Therefore, it implied more leadership actions and communications were built in this phase, so that no matter what the unit of analysis, the pattern of written communications was the same. Only the control feature of management activities in the wider picture showed more emphasis (the whole documents). It could be that the smaller ratio of leadership relevant documents, caused management aspects to come into focus. In addition, as the project expanded in this phase, controlling the
implementation and monitoring behaviours might reasonably be required more than in the first phase. The highly ranked concepts for this analysis included: **Network N1**, the whole region (instead of the three DHBs selected first), obligations that need to be met in Phase 2, payments, patients, tasks, details, and member. The similar themes inferable from the results were:

- Networking and gaining support: **Network N1**, the whole region

- Control (as a management activity): obligations, payment, tasks, details

- Clinical Values: payments, patients, member
Figure 5-3: Discrimination of themes for phase 2
The last phase (Folder 2012-2013) included concepts such as **benefits**, the **overarching initiative**, a patient-provider **network N2** (that was formed to facilitate innovation development by gathering innovators), the tool, **patients’ portal** (the tool specifically designed for patient communications), and the vendor (Figure 5-4). There were new instances of leadership (e.g., communication of the control forces coming from an overarching initiative), and review of values (benefits) that could be realised by this initiative. The patients, as a group of users of the innovation, came into focus. The vision of patient-centric care had created the expectation that it would appear earlier.

It could be inferred that change management was not the focus of the innovators’ interactions and social networking in this phase. Leadership relationships seemed to go through a new cycle of value creation, detecting sources of influence, facilitating innovation and controlling the overall direction (change behaviour). Control was a new aspect of leadership appearing at this stage. It seemed to be a factor of leadership relationships as its intention was to structure how people work and position the innovation development process within the bigger picture of similar innovations in the health sector.

- **Value**: benefits
- **Control** (as a leadership activity to direct and orchestrate initiatives): The **overarching initiative**
- Innovators feedback and facilitating innovation development: **Network N2**, the tool, **patients’ portal**
- **Influential sources**: **Network N2**, vendor, and governance

As with the other phases, I analysed the whole documents available in this phase to see how they might reveal extra insight into the data. Care coordination, pharmacy, localities, population, healthcare and patients’ portal were the highly rank terms. Care coordination was an emergent role that was realised to be important in management of the change (coordinate healthcare services between primary and secondary care services). I also interpreted this role as an agent to support patients and to make sure the new service was being formed. More importantly, it could add personal interactions that might not be provided through the IT system. In that sense, it was a relationship to support innovators in forming the service innovation (another leadership relationship). Pharmacies came into the focus of attention in this phase, as their involvement was being explored to see how it could be expanded and how their change process should evolve (evolutionary involvement of professional groups).
Figure 5-4: Discrimination of themes for phase 3
In relation to leadership, networking and support were highlighted in the texts. Localities were networks of primary-secondary care organisations that existed in a close geographical area. Collaboration within these local networks around similar goals (primary-secondary care integration) applied leadership at the micro levels. In addition, value for society (population, healthcare and patients’ portal) was the other lever appearing in the texts in relation to leading the initiative. Innovation development also continued in the focus on the patients’ portal, that was requiring more development at the time. In summary, the whole documents of phase 3 revealed more examples of leadership relationships, as in supporting innovators, networking and value creation.

Summary

Leadership focused texts indicated that communications in different phases were discriminated based on what had been most missing (feeling urgent) in the phases. For example, the first phase required the idea to be presented and initial influential sources introduced (including budget and key leaders). In the second stage, leadership needed to be expanded into other relevant organisations and initiatives (support). Therefore, values that could be introduced to clinicians (as a powerful group within these organisations) were highlighted. In the last phase, the initiative had grown enough to require boundary drawing and structuring procedures (controlling the direction). As the innovation was lagging in some aspects (i.e., the patients’ portal), leadership communications were also signalling other influential sources such as forums/networking spaces, that could facilitate innovation by getting innovators from different stakeholder groups together to participate in development. However, it was not easy to make inferences or find a pattern when the sampling unit was not narrowed, and the whole documents were available in the pool of the content analysis. The only possible inference of these analyses was that leadership actions and communications were less obvious in the beginning and had become more prominent during the life of the programme.

5.3.2. Individual concept maps

Next, I examined individual concept maps and their highly ranked themes (those with most connectivity and relevance). Individual concept mapping was a way to get better resolution of communications in the documents during each phase. The meaning of each theme was also informative in finding nuances in how discussions were directed, and possibly affected the focus of decision makers’ meetings afterwards. In the first phase (Figure 5-5), the themes emerging with more than 40% connectivity and their concepts were:
• **Care**: including care plans, shared care, primary care, care teams, and healthcare services

• **Programme**: the programme, pilot, members, governance, funding, project

• **Consumer**: consumer, provider, system, clinicians

A closer look at the concept map (Figure 5-5) indicates that the theme **care** mostly meant the care plans that were one of the main features of this innovative platform. It referred to the clinical advantage of using the tool to develop care plans for a patient with chronic conditions in a shared way. **Consumers** (the patients) constituted another theme in which providers and patients would be brought into relation via the information system proposed.

The other important theme was labelled **programme**, and is seen as rather separate from the previous themes. This distance could be due to the discussions in this theme that were around the implementation of the programme as a project, rather than realisation of its clinical goals. It was an inception phase of the project management in which the approach taken to implement it, the pilot (test) phase, the funding and governance issues, and the key members were discussed.
Figure 5-5: Individual concept map for Phase 1
In the next group of documents (phase 2), the highlighted themes were the same (Figure 5-6). The theme **care** was still the most relevant one, but had slightly changed in the way that it held the new way of work or shared model of care at the centre of discussions, instead of care plans. The text excerpts below are examples taken from the software where it generated the themes’ summary. They indicate the context in which **care** was raised as the theme:

“As primary care is the enrolment location this should be who ends enrolment”

“My GP [name] sometimes says to me, I have read your report from the hospital, so I know that everything is well coordinated.”

The theme **programme** was also moving from its inception (project management) stage to supporting the involved organisations (GP practices and secondary services), and engagement of new groups into this change programme (see below).

“The programme continues to have national support. Minister [name], Director General of Health, [name] all support to continue at pace, but not rushed at the expense of quality”

“All the GPs and practice nurses at [organisation’s name] and the [organisation’s name] nurse specialists have been trained since the pilot go-live.”

“Underpinning these domains we know that admission is a key crisis point when patients can become more activated and motivated to make significant changes. Evidence suggests hospitals have reduced readmissions by as much as 30% through enhanced discharge planning programmes”

The theme **Patients** did not seem different. It indicated issues detected around patients’ use of the tool and their adoption preferences:

“Patient portal discussions – a few patients identified as likely to use the portal”

“..., as well as how patients may exercise other capabilities such as posting goals”
Figure 5-6: Individual concept map for Phase 2
The last phase (2012-2013) provided another concept map (Figure 5-7), depicting individual automatic analysis across the documents. In this phase, the documents indicated that teams, their performance and change requirements were in the spotlight. The communicated messages were mostly about the users (business teams across health care organisations), the evaluation team, the management team, and patients and their families as members of the care teams.

“Within NZ a number of factors have been shown to contribute to successful interdisciplinary teams including: skilful leadership in each discipline…”

“The pre-determinants of success that the team should focus on in selecting provider organisations to enlist include…”

It could be implied that the language used in conversations had changed slightly. Instead of talking about the programme and its implementation, or the support that needed to be provided for the groups involved, the discussions conveyed that the teams involved (no matter from which stakeholder groups) were the owners and were collectively identifying the programme itself. Support was one of the concepts in this theme and included support coming from user teams for the change process.

The issues discussed around the care theme appeared more inclined toward achieving the vision of shared care and dealing with barriers. The texts attached to the concepts seemed to be concerned with expanding the implementation of the programme and better adoption of the new model of care. For example, medico-legal aspects of using the new model of work and barriers to adoption for primary/secondary care services were referenced:

“Health care professionals including pharmacists strongly believe in Shared Care principles but there have been barriers to uptake.”

The patients theme included texts that communicated issues working against better use of the tool by patients, the roles that need to be created to help the flow of the new model (such as care coordinator), and how it could be understood if the patient-centred model of care was realised by using this system. It indicated a review of the change in the model of work in regard to patients but from the programme’s point of view. It also reflected that patient-centred care and its requirements had come into focus.
Figure 5-7: Individual concept map for Phase 3
Summary

The individual concept maps that focused on the themes discussed in each phase can be summarised as follows (see Table 5-1). The interpretation could be made that, in all phases, the theme care was mainly referring to the innovation itself. It was presented in the light of more tangible aspects (e.g., clinical advantages of shared care planning) and evolved to the purpose of changing the model of work, achieving the vision, and dealing with barriers (see Table 5-1). It could be inferred that programme members had tried to start from more tangible and predictable aspects of the innovation and let the change and the vision evolve along the way.

### Table 5-1: Summary of findings from individual maps

<table>
<thead>
<tr>
<th>Phase one</th>
<th>Innovation: clinical advantages (shared care planning), new features</th>
<th>Patients: introducing patient-centric vision, how to do it</th>
<th>Project management: Inception, how to implement it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase two</td>
<td>Innovation: changing the model of work</td>
<td>Patients: adoption issues</td>
<td>Support: support organisations involved, engagement of users</td>
</tr>
<tr>
<td>Phase three</td>
<td>Innovation: Achieving vision and dealing with barriers</td>
<td>Patients: reviewing change status, focus on patient-centred care vision</td>
<td>Teams: owners of innovation, their support of programme, collective act</td>
</tr>
</tbody>
</table>

Patients had also been raised as an important theme in all the phases. However, similarly to what was seen in the discriminating analysis, the patient-centred care came into the focus of discussions and actions mostly in the later stages. This could be interpreted as less interest in leadership of this aspect. The last point relates to how meaning behind communications about the programme had changed. It started from project management, moved to support, and then to a leadership message that invited active contributions from all the teams involved and acknowledged their importance. It could be seen that the role for collective action from all the teams involved (from users to technical developers and project management teams) was not conveyed clearly until the last phase. It might explain confusions about, or lack of, users’ contribution as they had not received this message from the early stages. This inference needed further enquiry and validation in the in-depth interviews, especially with those who were clinical users of the programme (theoretical sampling).

5.4. Discussion

The content analysis conducted provided non-necessary true inferences and an insight into the concepts relevant to the leadership of this programme. The themes and concepts emerged can be used as instances of data in the next stages of data analysis, provided that they emerge and become validated there. The discriminating analysis of the three phases of the programme revealed that leadership communications had grown throughout this time. Some of the actions and
communications were more distinctive in each phase: presenting the idea and providing influential sources in phase 1, networking and gaining support in phase 2, and controlling the direction and facilitating innovation in the last phase. These communications were responding to what was felt as urgent or missing in each phase.

Concepts that indicated the idea of the shared care programme seemed to be changing during these periods (e.g., shared care record attached to phase 1). There was a lag in the actions and making sense of the main concepts of the innovation. Even values and benefits of the innovation were under discussion in the later stages of the programme. Patient-centric care, one of the main concepts of the innovation, made a late appearance as patient portals were highlighted in the last phase. This might indicate that innovators needed to go through a learning and discovery process about the vision, what it meant or the values it could bring about.

This learning and evolving characteristic was also observed in the individual analysis of each phase, where the focus of the phase was explored in depth. Innovation was discussed in relation to its tangible parts (shared care planning feature), then the discussion moved onto development of a new model of work, and discussions around barriers to the vision. Interestingly, leadership was also seen to go through a growth process as found in the discriminating analysis. The communications about project management, supporting innovation evolvement, and expansion were replaced by talk about the collective act (of teams) and its key role in the whole change process. This lag in the acknowledgement of collective leadership of the innovation might explain confusion among users, or lack of users’ contribution. The late focus on patient-centred care also appeared in this part of the analysis, indicating a potential issue in leadership of that part of the vision. It was probably the reason why facilitating innovation appeared as a theme in the third phase.

5.5. Conclusion and next stage

In this chapter, I sought answers to the following narrow questions to be able to infer the meanings behind communications in this innovation development. What are the leadership concepts and the distinctive themes in each phase of the programme? What is the focus of each phase? For instance, the distinctive themes in each phase helped infer how leadership communications had grown throughout the time. Moreover, learning about the focus of each phase helped infer that there was a lag in response to collective leadership of the innovation that might have caused the lack of users’ contribution.

I used a CATA tool to assist me in doing content analysis over the documents available from this programme. The techniques applied to the tool and the concept maps generated enabled me to come
up with abductive inferences, to find the meaning behind the communications. The findings answered the questions with some limitations, due the selective access to the programme’s documents. For instance, I realised there were repeated contents in different seminars or presentations of the programme team, which might have had an effect on the connectivity of some of the concepts. Moreover, there would have been communication documents across the groups that were not made available to me.

The findings in this chapter will be considered in the data collection and the analyses of the interviews. This will allow validation of inferences and constant comparisons between instances of data in the next data collections.
CHAPTER 6. Innovating as you go

6.1. Introduction

During observations (Chapter 4), I learned about the stakeholders and their relationships, and came up with some inferences and probing questions regarding the innovation, its development properties and the meaning behind leadership interactions. It provided the basic insight for deciding where to start the next enquiries (theoretical sampling), and what to look for (sensitising), to unfold other properties of this innovation and validate what had been inferred.

In Chapter 5, I looked at the available documents to explore communications to reveal the meanings associated with people and situations that mobilised the programme members to act. It provided another slice of data (Glaser & Strauss, 1967) toward understanding leadership relationships. Similarly, the findings of this chapter are in the form of not-necessarily true inferences that need to be validated by subsequent data collections.

The two steps of data collection described in Chapter 4 and Chapter 5 aimed to help in answering the overall research question: How do patterns of behaviour in leadership and development of large scale innovations in a health IT context affect each other? However, so far the data collection and analyses have not been in-depth regarding the innovation development and its leadership processes. Therefore, in this chapter, the focus is on innovation development and validation of findings of the previous chapters (where possible), by interviews with key informants. It did not seem practical, though, to focus on both innovation development and leadership relationships at the same time when interviewing participants. One reason was the limited time of the interview sessions, and the other, the fact that some interviewees might be more knowledgeable about the process of innovation development with less involvement in the leadership aspect, and vice versa. Therefore, it was more appropriate to establish two sets of interviews focusing on innovation development and leadership, respectively.

It should be noted that understanding the innovation development process was the prerequisite to knowing how people led this process, as the major focus of the study was on leadership. Therefore, I considered it appropriate to use the convergent interviewing method for the first stage to be able to reach to a quick consensus among key informants involved in the innovation process (Rao & Perry, 2003). Convergent interviewing allows refinement of the research questions and identification of issues relating to it (Rao & Perry, 2003; Riege & Nair, 2004). Later, as can be seen in the next chapter, an in-depth cycle of interviews allowed findings to be woven together as I delved further into
leadership relationships and their interactions with the innovation process. The focused question for the convergent interviews was:

- What are the key issues, events and characteristics of the development process of the shared care programme (as an innovation)?

I conducted 11 interviews, at this stage, with key informants of the innovation development in the shared care programme. The interviewees included formal leaders and managers who were involved from the early stages of the programme and others from the different groups of stakeholders. I started the convergent interviews with open questions to maximise the potential of hearing participants view without constraining them, and to minimise my influence (Dick, 1998; Dick, 2014). Later in the interviews, probing questions focused the enquiries on what had been raised by the participants, and to help refine the theory (Dick, 2014).

To explore topics and issues raised in the previous stages, I inserted a few probing questions into the conversations and allowed participants to talk about these if they made sense in their experience. These probing questions (topics) were only discussed if the flow of conversation made it appropriate to raise them; otherwise, they were left out if the story described by the interviewee did not indicate any space for them. In this way, nothing was imposed on to the interviewee. Examples of the probing topics and their relevance to the previous data collections are:

- Their perspective about innovation: to know why they define it as an innovation, and which aspect of innovation they refer to; looking for concepts such as ongoing change, evolutionary change, complexity, and co-construction from the previous findings

- The decision makers: to identify primary decision makers and how the vision was defined; looking for concepts such as middle-out approach, controlled decision making and collaborative leadership from the previous findings

- Communications that were affecting people’s actions: looking for informing and learning processes; how they describe relationships with relevant initiatives; how groups A’s advice impacts lower levels; if the dynamic of power among doctors-nurses impacts their leadership role in this case

117
• Outcome: to know how they describe the outcome and if they see any changes in the Health System; whether there is a link between low adoption and evaluation of the outcome

• Roles and responsibilities: how they describe it within the programme and if there is a confusion that impacts the progress

• Innovation goals versus existing priorities: exploring the validity of my inference about conflicts between shared care goals and existing goals/priorities in the health system

• Adoption of innovation: if low adoption rate has affected the innovation development

The findings follow next, with details about the way people responded to the enquiries and how the main issues were emerging.

6.2. Main issues of innovation development

The analysis of the 11 transcripts made of the convergent interviews led me to draw up seven categories (Table 6-1). These categories indicated major issues discussed by the interviewees about this innovation process. Using emerged issues from convergent interviews for their study, Rao and Perry (2003) developed a preliminary model and then asked interviewees to comment on it. In this research, I decided to take the concepts emerged forward for further validation within the next stage of interviews (in-depth interviews), that focused on leadership relationships. It was helpful to weave all the findings (observation, document analysis and convergent interviewing) together and to strike up rich discussions around inter-relationships between these constructs.

The issues emergent from open and selective coding conceptualisations were abstracted into seven high level categories, as shown in Table 6-1. They included all the issues agreed among the interviewees, and those that were divergent. In each category, I described the concepts that were agreed by most of the participants and also elaborated the disagreements, if the issue seemed critical in explaining the dimensions of the theory. Using grounded theory methodology allows the researcher to discard parts of analysed codes that do not show enough instances to constitute the theory. This aligned with the decision applied in the convergent interviewing technique i.e., to ignore codes raised by less than half of the participants. Their effect might still be seen in the higher level categories as I
did not exclude them if they fitted in a category. It was only that they were not significant enough to be discussed as properties or dimensions of the raised issues.

Table 6-1: Main issues of the innovation

<table>
<thead>
<tr>
<th>Main issues of the shared care innovation</th>
<th>Agreed Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption &amp; behavioural change</td>
<td>values &amp; usefulness perceptions, resources required, capability to change, innovators, pressure and frustrations, willing to change and mandate for change</td>
</tr>
<tr>
<td>Cracks of the innovation</td>
<td>An objectivist push, Deviation from the core, The change process situation, Variety of assumptions, and Innovation stifle</td>
</tr>
<tr>
<td>Innovation properties</td>
<td>Newness, Values, Innovators, Change desired, The vision, Ambiguity, and Cost of innovation</td>
</tr>
<tr>
<td>Leadership</td>
<td>External collaboration, Organisation and coordination, Governance, Influencing the vision and focus, and Primary decision makers</td>
</tr>
<tr>
<td>Innovation development stages</td>
<td>Engagement stage, Learning and development stage and Implementation stage</td>
</tr>
<tr>
<td>The end users’ demands</td>
<td>Social value of the patient-centric approach and Patients’ benefits</td>
</tr>
<tr>
<td>Change requirements &amp; consequences</td>
<td>Change unknowns, Expectations, Readiness, and Implementation</td>
</tr>
</tbody>
</table>

In presenting the findings, I used a coding system (i.e., acronyms) when quoting participants to indicate their affiliation as a stakeholder. For example, GB, IM; means the quote is from a member of group B who was also in the Implementation team. The codes and their meanings are presented in Table 6-2.

Table 6-2: Quotation coding system and its meaning

<table>
<thead>
<tr>
<th>Codes</th>
<th>Meanings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Academia</td>
</tr>
<tr>
<td>ET</td>
<td>Evaluation Team</td>
</tr>
<tr>
<td>GA</td>
<td>Group A</td>
</tr>
<tr>
<td>GB</td>
<td>Group B</td>
</tr>
<tr>
<td>IM</td>
<td>Implementation and support team</td>
</tr>
<tr>
<td>MD</td>
<td>Medical Doctor</td>
</tr>
<tr>
<td>N</td>
<td>Nurse</td>
</tr>
<tr>
<td>V</td>
<td>Vendor’s representative</td>
</tr>
</tbody>
</table>
In the following sections I present the seven categories found and use the coding system when quoting the interviewees.

6.2.1. Adoption and behavioural change

The first category with most of the instances (Table 6-3) is called adoption and behavioural change. It included issues that affected people’s decision to adopt and use the innovation, and to change their behaviour. The concepts in this category, that were agreed by most of the participants, were ordered based on the number of instances of data, as follows: values and usefulness perceptions; resources required; capability to change; pressure and frustrations; innovators; willing to change and mandate for change. There were adoption factors mentioned by a minority of participants, including motivations, compatibility, sustainability, usability, and organisational support that are not explained in this section.

Table 6-3: Adoption and behavioural change category - convergent interviews

<table>
<thead>
<tr>
<th>Adoption &amp; behavioural change</th>
<th>Values &amp; usefulness perceptions, Resources required, Capability to change, Pressure and frustrations, Innovators, Willing to change and Mandate for change</th>
</tr>
</thead>
</table>

**Values and usefulness perceptions**

Clinical and administrative users of the shared care programme needed to perceive the advantages of using this programme to make the hassle of changing their way of practice worthwhile. They also expected some value to be added in their new experience by using the IT tool. Otherwise, they felt something was pushed to them when they did not see the benefits of it (mentioned by a participant in the vendor’s team). People were not motivated to try something new if the benefits were not perceived to be high enough, as mentioned by one of the leaders (from GB, IM):

“I don’t think there’s enough in the [patient] portal to get excited about, to be honest. I mean as a person with long-term conditions myself, it would do nothing for me to be able to log on and see my care plan.”

One of the values that people referred to related to the pervasiveness of the innovation. As could be understood from quotes similar to the one below, the idea of shared care required communication between groups of care providers. If the innovation was not adopted by other providers involved with care of a patient enrolled in a primary care setting, using the innovation might not add any value for the primary care provider, (quote from ET).
“So practices embrace their idea; and all their people with chronic conditions embrace the technology. But then they want to send a referral to a specialist, and the specialist hasn’t got the technology.”

**Resources required**

The other adoption factor raised was the resources required by users and leaders/managers to do the extra work, and to add new roles to the system. People talked about the role of financial compensation, funding ownership, and time. Two of the participants associated the funding model and its ownership (where it comes from) with the direction of the innovation. They compared a similar initiative in the Canterbury region (a smaller and simpler change initiative) with the programme to discuss the impact of resources on people in implementing and using this innovation. The resources also needed to be allocated based on the existing financial model of care provision, as can be understood from the quote below (by V):

“In the primary sector it’s a private business, so they get some funding from the government but you know, ... if they only see 3 patients one day their income is cut down. Whereas you know, in the secondary [care] area if you only see 3 patients well you still get your same amount of money.”

**Capability to change**

Capability to change was the next issue influencing adoption of the innovation. If not everyone in a primary care practice had access to an electronic medical record or Patient Management System (PMS), then the first step to developing an electronic tool that used the existing electronic records was lacking. As one of the features of shared care was to develop and share care plans for patients with chronic conditions, all the care providers involved needed to know the care planning concept and be on the same page to be capable of participating in the change. Other capabilities mentioned included users’ computer skills, computer literacy, and self-capabilities (their perception about their own ability to conduct a job).

Three participants also mentioned a capability issue that seemed important, but controversial (not everyone agreed on the solution). It was about the adoption order among groups of users (e.g., clinicians, patients, and managers). Some believed that patients needed to be considered as drivers of change for doctors, as they were tending to demand more of their electronic health information. Others gave more weight to clinicians’ adoption than patients’, but they believed it should be an “interlocked” process of adoption: “to get the dialogue going with consumers and clinicians you needed clinicians thinking in that space”. In the end, the programme members found the process of patients’ adoption had fallen behind that for clinicians, as the patient portal did not deliver what was
expected on time: “And so I think in the end there was a complete paucity of the consumer/patient design within it.”

This adoption order issue and associated disagreements could be interpreted as a sign of the relative power of doctors over patients. One of the interviewees raised the following question indicating this power divide, and his answer to it reflected the debates around adoption order (quote from ET): What are the benefits of enabling patients to have more effective interactions with their care providers?

“And there is just a lot of disagreement about that, ... Because it is not, there is not a consensus over why we would offer this opportunity for patients to be involved in this way.”

He continued his point by referring to the limitations of the innovation development process (an under-developed product), implying that it was reasonable to first involve clinicians in the development process, and then engage patients:

“...any system that we would’ve chosen would require significant development... The question then is where do you put the development focus with limited resources and limited time. And the answer is you put it into the clinical teams, you don’t put it into the patients. Well because if the clinicians are unable to adopt it then making it available to the patients is, you know, it’s actually unrealistic because you need the clinicians to be involved.”

**Pressures and frustrations**

Pressures and frustrations were other challenges for those who decided to adopt the innovation and participate in its development. The examples of pressures and frustrations mentioned included: pressure from DHBs as they were contributing to the cost of the programme; shorter time dedicated for the innovation than it needed; financial pressures; emerging changes; pressure to prove the innovation outcomes; the degree of change expected; not progressing in change; and long-term incremental change that was not desirable for many people. The frustrations were ruining relationships between programme teams and people started to blame each other. A participant mentioned that “people started to behave in a way that nobody liked”.

**Innovators**

In this study, innovators were not just those involved in the development of the tool. Clinical/administrative users who participated in the identification of the new model of work, a group of formal clinical champions (as known in this case) who both used and promoted the innovation, programme team members involved in the development of the new process (shared care practice), and any enthusiastic users who actively participated in the refinement and development of the new service for patients, were all defined as innovators (see Error! Reference source not found. for the definition).
These groups of innovators could facilitate or hinder the adoption process. For instance, the developers of the IT tool thought it was useful to have ongoing conversations with users/potential users to get their feedback and also inform them about new features and improvements. Champions could not have enough impact on adoption if they were not using the innovation in their practice, or if they could not interact with “less enthusiastic [people] and help be their spokesperson” in the programme. Finally, those who participated in the process innovation needed to have perceptions compatible with what the programme teams was promoting, in order to direct the adoption in the right way.

*Willing to change*

The first step in adoption happened when programme team members reached out to users in clinical settings to introduce the innovation. Participants reflected that they needed to see willingness of the audience to listen and to open up about the change in the first place. Some of the clinicians had already moved toward the change (e.g., allowed patients to communicate electronically with them). However, doctors might fear letting go of their control over clinical practice when they worked in a shared environment. They might perceive it as a risk to their job when patients had more control. This new way of thinking was different to how clinicians had been educated. Hence, participants felt a “cultural resistance” to change existed within the healthcare industry.

*Mandate*

Participants also referred to a controversial issue: mandate to apply change. Based on what Kohlberg (1975, p. 219) defines as the first levels of moral development, people primarily decide on their actions based on their perception of punishment and obedience, their own needs and to gain approval (by responding to authorities and rules). At a higher level, behavioural decisions are based on logic, comprehensiveness, and consistency (Carey, 1992). In the shared care case, people indicated different opinions about the appropriateness of authorities using a mandate to make the change happen. Although, using a mandate and coercive power to direct people toward change is not considered as a moral leadership style by Burns (1978), it can impact the adoption of innovation when the higher levels of moral development are not reachable. Later in leadership (section 6.2.4), the interpretation of the data indicated that motivations and internalisation of goals could have eliminated the need for a mandate.

6.2.2. Cracks in the innovation

During innovation development, many issues and unpredicted outcomes can emerge that then feed back into the process and change the conditions. Participants mentioned many instances of issues that
shared care programme leaders/managers responded to, and thus affected the rest of the process. I interpreted these issues as cracks in the innovation that were inevitable while they did not break the wall; it was “how the light gets in” (Cohen, 1968). The five highlighted issues (by most of the participants) are labelled as follows (Table 6-4).

<table>
<thead>
<tr>
<th>Cracks in the innovation</th>
<th>An objectivist push, Deviation from the core, The change process situation, Variety of assumptions, and Innovation stifle</th>
</tr>
</thead>
</table>

**An objectivist push**

There were many examples that indicated an objectivist push toward fixed outcomes in the shared care programme. A change initiative can be planned or emergent (Burnes, 2004a). This push was called objectivist as it highlighted the diluted role of emergent and ongoing change in the implementation of the innovation, and reflected the push toward planned changes or predefined outcomes with scheduled deadlines. Figure 6-1 indicates a snapshot of how this issue was raised in the analysis, via open coding and selective coding of the data.

> "And it wasn’t well developed because everybody was focused on the enrolment targets and these six monthly deadlines."

> "We start talking about IT solutions when what we should be talking about is how we redesign healthcare."

> "...But there’s a tension in that from the programme group, of expectations on them for what, you know, a spend needed to look like. And what the expectations of what A to Z should be."

> "And people are really busy and they need to see quick wins and I think this change process is a very, is a long process .... to get people to have quick wins, it was and is quite difficult."

For instance, there was a tension and pressure on the programme team, especially the managing company, to prove the adoption had been successful and the expenditures from the DHBs and the NHITB had met the expected outcomes. Therefore, people were asked to focus on the number of patients enrolled in the programme, or other fixed outcomes, that had been planned for each six-month period.
Deviation from the core

During the innovation development, people complained about losing the vision, being lost in unimportant issues, not realising the requirements, and sometimes misleading the innovators. Innovators, even project management team members, mentioned this feeling of deviation. It was a recognised deviation from the core of the change. The quote below (from GB) is an example of deviation regarding realisation of what the target group (i.e., patients) required.

“...you can see it’s all, this [is] provider driven stuff. It’s all the stuff that they want to see in the shared care plan. Whereas what we know people want in terms of self-care planning and coordination is much more around, not their treatment plans and things, but much more around their support systems and networks...”

The change process situation

As another crack in the innovation, people talked about the change process and their struggles with its clumsy pattern. For instance, it was not clear who was responsible for identification of the desired change process and how it would be performed. The IT vendor expected to conduct process related discussions with users and then build their product based on their requirements. On the other hand, the managing company was controlling what was happening in the field as they had the authority for project management. Moreover, the distance to the desired change status, according to the vision, was quite far. Thus, people felt demotivated and did not see the potential of change being fully realised. Three participants raised a controversy around appropriateness of a radical/revolutionary as opposed to an incremental (bits of small scale changes) change. It could be seen that there was not a common agreement, as a radical approach could be beneficial for its holistic approach (the big picture), while incremental change seemed more pragmatic for such a big change programme.

Variety of assumptions

The discussions indicated that having variety of assumptions was unavoidable. For instance, one participant mentioned how there were preconceived perceptions about patients in a specific geographical area, implying that they might not have access to the internet or computers. Even the main concepts of shared care and patient-centred care were considered to be perceived differently by programme team members. These concepts then needed to be unpacked, as the quote below (from GA) indicates, when engaging healthcare providers in the field to let everyone be in the same page.

“Shared care is a good word, but what did it really mean, and was it shared care, medical care information?”
There were also assumptions on what the key roles were in the development of the new model of care (i.e. GPs were chosen first), that changed as the innovation progressed.

**Innovation stifle**

Another emerging crack in the innovation, which could be related to the objectivist push observed in the behaviour of programme authorities, was that people felt innovation was stifled at some points. For example, when people were receiving constant feedback on the low adoption rate they were feeling more pushed toward the expected outcomes (fixed number of adopters), and this was a barrier for creativity. There were other instances such as a focus on IT products and technical problems, controlling innovators (not feeling the ability to change), and following a planned approach for change management. A participant (from ET) explained this innovation stifle issue:

“You know, it’s the usual thing of we really want to be different but we’ll apply the same methodologies of review and milestones as if you’re just a standard type of implementation of a service, you know, create this, get this, first patient here, da da da.”

These feelings seemed to be contributing to another crack, if the programme members could not find a way out of it.

**6.2.3. Innovation properties**

Moving from the cracks in the innovation, the next category emerging was about innovation properties. The findings introduced seven highlighted (agreed) properties when people explained their definition and perspective of innovation in general, and what they experienced in this programme: newness, values, vision, innovators, change desired, ambiguity (diversity of perceptions), and cost (Table 6-5).

| Innovation properties | Newness, The vision, Values, Innovators, Change desired, Ambiguity, and Cost of innovation |

**Newness**

The shared care programme was associated with a new concept, new way of work and new products (IT tools) as an innovative initiative. There seemed to be controversy about the newness of the shared
care concept. Some argued that shared care had been around in care provision, even though in paper-based format or using phone conversations. The others referred to the new form of asynchronous communication between all the providers and provision of real-time data for all of them. One of the participants (GB) elaborated how development of this new concept necessitated changing clinicians’ mindsets about their role and patients’ position:

“The majority of people haven’t got it and there’s a whole journey you’ve got to take people on around, this is about the patient’s goals and aspirations, not about your aspirations around their complying to your treatment plan. A philosophical change that has to happen in the mindset before they will effectively engage with this sort of stuff”

The vision

Looking at the data elaborated subtle distinctions in people’s minds when they talked about the vision rather than values of the innovation. Vision was seen as the high level goal of the innovation and the message that could attract potential adopters to listen to the innovators, and the reference point to guide thinking about how to create values for adopters. It can be interpreted from data that people did not necessarily perceive the values from hearing the vision.

Values

Values that were discussed as adoption factors (see 6.2.1) were also one of the innovation properties. The closest concept to values was the vision of innovation. As mentioned above, I discriminated them as I realised the vision might not necessarily create values in the eyes of potential adopters. The participants discussed values such as pervasiveness (having many colleagues and patients using it), being connected to others, and sharing information. It was interesting to explore these values more in the next stage of interviews, when enquiring about leadership of the innovation.

Innovators

In order for an innovation to be nurtured, a number of social entities should play an innovator role. This concept was defined in the Error! Reference source not found. section as it was considered to have impacts on adoption. Similarly, the role of these innovators needed to be explored in the next stage of interviews.

Change desired

When participants were defining innovation or when they were elaborating why they saw shared care as innovation, the majority of them associated it with change. The purpose of the innovation was to reach to a desired change in the current situation. The flow of events and the conditions increased the
demand for small scale changes, rather than the radical change initially intended. The monster change was described as bringing lots of difficulties, frustrations, conflicts and resistance that could have caused the deviation from the idea of radical change. The quote below struck with this thinking around a link between the innovation’s properties (e.g., the scale of change) and leadership capabilities. It suggested that learning from previous experiences of leadership might affect the next practice of leadership in similar change projects (quote by V).

“I don’t think there’s enough experience firstly and leadership around what needs to be done when it comes to changing things this big and there’s huge amount of change”

This potential link needed to be verified by other instances of data in the next stage of interviews.

**Ambiguity**

As another property of the innovation, four people told stories about ambiguities in the innovation development journey. Whether the focus should be on the IT tool or the process change, how people interpreted the vision and how it should be operationalised were examples that reflected as ambiguities for the programme members, as they showed diverse perceptions in this regard.

**Cost of innovation**

The data also supported the innovation needing some time for investment and exploration before it could become predictable and prove to be either workable or not. It was also taking time and resources in the development process before it could even achieve its real outcomes. There might be a need for new roles and services or a way of compensating the extra work by users. These were examples of costs associated with the innovation.

**6.2.4. Leadership**

In this stage, people talked about leadership to a lesser extent (than in the in-depth interviews) as they were not asked directly about it. However, as they knew about the overall purpose of the study and, perhaps, because in their minds they associated the innovation development with its leadership process, the concepts were raised in their discourse (see Table 6-6). The codes (selective codes) that most of participants agreed on included external collaboration, organisation and coordination, governance, influencing the vision and focus, and primary decision makers. These codes were categorised as leadership as they were part of the influential processes that contributed in introducing the change and moving toward the new order.
Table 6-6: Leadership category - convergent interviews

<table>
<thead>
<tr>
<th>Leadership</th>
<th>External collaboration, Organisation and coordination, Governance, Vision and focus, and Primary decision makers</th>
</tr>
</thead>
</table>

**External collaboration**

Many interactions were conducted to fulfil collaborations between groups and organisations external to the programme that had common interests, or were among stakeholders of the programme. Projects/programmes with similar goals (e.g., integrated care) collaborated to learn from each other and to converge on a national scale. External influencing bodies (such as other IT providers in the health market competing with the vendor) needed to communicate and solve operational issues collaboratively, as none of them had authority/power over the other and they could all benefit from the improvement in the infrastructure in the health sector.

**Organisation and coordination**

The next leadership related concept was organisation and coordination. The shared care programme aimed to have clinical users’ input into the innovation development. There were controversial discussions asking whether there were enough organisations (as an action not a noun) and alignments to facilitate their contribution (see quote below by IM, V).

“... and we used to always complain about that that it wasn’t a regularly set up clinical user group to provide advice on how the tool should perform.”

In addition, they realised using a new role as “care coordinator” would help management of patients within the new model of care, as there were many tasks to be coordinated across different healthcare settings. It seemed that coordination was not achievable by just using the IT tool and people needed to find the process for arrangements, by having someone responsible for gluing things together.

The need for such an organising and coordinating role was the same on the larger scale within each DHB, and at the national level. At the DHBs, there were lots of Health-IT projects and initiatives that needed to be managed at an upper level to prevent duplications and make the best of their investments in the sector. Forming the National Health IT Board was also a structure for pursuing this coordination and consistency at the national level.
**Governance**

People referred to governance primarily to describe who had the authority in provision of consistency between groups and organisations, at local and national levels. It was related to using power and indicating strategies that helped converge directions in different organisational settings. Sometimes the existing structures played this role (as general managers in some localities did). The quote below, from GB, elaborates it:

> “Planning and funding triggered it off and then they bought in stakeholders from around. So there’s structure in place in Counties that they don’t have here. As it there’s a GEM, General Manager for every locality, who is supposed to, I think they’re actually paid by the DHB, and so they’re supposed to trying to align the localities”

As mentioned in the adoption category, funding ownership was important in clinicians’ response to the innovation. Their adoption was different when they perceived it as a resource coming from the DHBs, as funders of the services, as opposed to when the funding was dedicated to the managing company, a shared service provider responsible for IT development and procurements in the region. Therefore, resource allocation and the source of it was another governance related factor that affected leading this change. I decided to save this concept as part of the leadership category and investigate it more in-depth during the next stage of interviews.

**Vision and focus**

Another leadership concept emerging was about the vision and focus of the innovation. Some participants thought they needed to have people who could imagine the end point of the innovation development and the big picture, while the rest were bound to their day to day issues and could not see beyond it. They mentioned that these visionaries should clearly communicate the vision to help others see the values and goals. Then high executives and leaders’ statement of the vision needed to support what other visionaries were communicating.

Those who were responsible for management of the projects within the programme had sometimes been accused of misdirecting the focus, by neglecting the main part of the vision (i.e., developing a new model of care). It seemed that the vision got lost when it was translated into more focused goals and objectives. Hence, it was said that, after a while, people needed to readjust their movements to align with the vision and move back into the right direction.
Primary decision makers

The data indicated that the attitude of those who made decisions in provision and procurement of health services regarding IT and Health-IT projects affected the result of the change programme. One of the participants (ET) described it as below:

“...And because they see it as a cost they see it as separate from their business. They regard it as an overhead, and because they regard it as an overhead they try to spend as little as possible on it. What they don’t see is that in order to transform their organisation, the way they deliver the healthcare and so on, they need to understand how ICT needs to be invested in order to do that.”

There were a few participants who elaborated this issue by referring to people or groups who had clear influence via their decision making and their authority. Therefore, I categorised primary decision makers in the health system as another leadership concept.

An overlooked point of the leadership category

There were some other issues mentioned about leadership that did not have many instances in this stage. One of them seemed understated by participants, as only two people mentioned it, but it was worth probing in the next stages to clarify the reason behind it. I coded it as motivations and internalisation of values. If people internalise the innovation’s goals, they go beyond their self-interests and adopt high level values such as equity, and then act upon its realisation (Maslow, 1965). This is a high level motivation called “self-actualisation”, where people devote themselves to an ultimate value and consider it as their “meta-needs” (Maslow, 1965, p. 110). In that situation, as Maslow describes, people become selfless and throw themselves into an experience. This concept can eliminate the need for mandate (discussed in the adoption category, section 6.2.1) because if people can internalise and adopt the innovation’s goals, it feels sensible to dedicate themselves to innovation without any coercion.

I think in a similar project in the Canterbury District (compared to this programme by many participants), a natural disaster (i.e., earthquake) set the scene or prepared the condition for change. This disaster actually motivated people to adopt the innovation’s goals and helped them become selfless and find their “meta-needs” (i.e., Maslow’s self-actualisation). Therefore, they internalised values of the innovation (as Katz & Kahn describe, 1978)). I probed this concept in the in-depth interviews to elaborate how this internalisation might have played a role in leadership processes.
6.2.5. Innovation development stages

Apart from the shared care innovation and its characteristics, participants talked about their experience or perspective of the stages in which shared care was being developed. Hence, I categorised these concepts as innovation development stages (Table 6-7). They discussed three stages more than others: engagement stage, learning and development stage and implementation stage.

<table>
<thead>
<tr>
<th>Innovation development stages</th>
<th>Engagement stage, Learning and development stage and Implementation stage</th>
</tr>
</thead>
</table>

**Engagement stage**

This marked the time programme team members were trying to build relationships with other stakeholders and people in the health sector who could be adopters of the innovation. They needed to educate people with the new concept and the IT tool, prepare them for change, and justify the abstract idea (will it work?). This stage could be interpreted as both a commercialisation (required salesman skillset as mentioned by a participant) and adoption stage (by justifying the idea), according to what people said.

**Learning and development**

This stage was the longest one and included many sub-processes and activities. It was when the idea of the innovation was being shaped, ready for implementation. In the shared care programme, the implementation in the field happened at the time of the idea development. It meant that some of the users of the innovation were developers of the innovation as well.

Therefore, the development transactions were part of this stage and included co-design activities, and capturing users’ problems. Meanwhile, the unpredicted aspects such as emerging key roles, outcomes and even the change, needed to be responded to. As shared care was an Action Research (Lewin, 1951) project, there were processes to learn from users (adopters), innovators, and evaluators’ feedback and apply these in the development process. One of the complaints about the development stage was that there was not enough attention paid to the process redesign. If the aim was to develop a new model of work, the required process needed to be unbundled by exploring the existing processes and how they could be transformed or redesigned.
**Implementation stage**

Apart from having mixed stages of development, implementation, and adoption, the data indicated that the distinctive activities around implementation of the shared care initiative were drawing boundaries around the scope of work and its focus. For instance, patients might have social issues that had led to their health issues. There was debate about the fact that these patients needed to be viewed holistically, including all their medical and social conditions, as they might not be able to go beyond their social problems and deal with health issues. Finally, the limitations of resources caused the leaders of the programme to decide on exclusion of social aspects at this stage.

In addition, they had discovered barriers to the implementation that needed to be removed. For instance, there was a prominent IT company that owned a big market share in the health sector, via its PMS being used by large number of clinicians. The programme and its IT vendor faced a lot of problems in achieving interoperability between those PMS systems and other ISs used in secondary or community care settings, due to weak cooperation of the PMS vendor.

### 6.2.6. End users’ demand

The next category found in data was about the end users’ (patients’) demand. Participants mentioned some points about the patients’ demand that mostly revealed what was missing regarding patients, rather than what the innovators agreed on. People commonly mentioned their perspective about the social value of patient-centric approach, the demand for it and how it was beneficial for patients as end users of the innovation (see Table 6-8) (these concepts are elaborated in this section). There were also fewer incidents that reflected the need for patient-led preparation, feedback processing, compatibility of the innovation with patients, and culture change to increase the existing demand and make better use of it.

Some of the participants thought a patient-centred move needed to be patient-led too. For that they should have given the patient portal to them (not just through their GPs) and have let them start this process by including what they want in their care plans. Patients needed to be equal to the care providers in deciding on a care plan appropriate for them. In fact, the programme was trying to indicate that care plans should not be medical plans prescribed by doctors, but should be about what motivated patients to change their behaviour and manage their condition better.

Later they would be able to ask their GPs whether they had access to this IS and could communicate with them. People also complained about not investigating the real input of patients in this electronic plan, where the technology issues took the attention. Thus, similarly to what was found in the document analysis (Chapter 5), the data indicated a weak leadership in realisation of the end users’
demand or patient-centred care. The most discussed concepts in this category are explained in this section.

**Table 6-8: The end users’ demand category - convergent interviews**

<table>
<thead>
<tr>
<th>The end users’ demand</th>
<th>Social value of the patient-centric approach and Patients’ benefits</th>
</tr>
</thead>
</table>

**Social value of the patient-centric approach**

It was not sustainable to continue the current way of health care delivery, according to the participants. They discussed that such change initiatives were trying to solve this problem with innovations; otherwise there would be more failure in responding to the expectations of population. At the moment the benefits were more toward the cost-effectiveness of the healthcare delivery rather than patients’ care. However, this could be seen as a common interest that would eventually benefit patients when they could access their health information and communicate with their care providers easily. This social value was reflected in the National Health IT Strategy (National Health IT Board, 2010) that called for the enabling of all patients to access their shared health information.

**Patients’ benefits**

This innovation claimed to solve a problem for patients as its end users by smoothing their experience with multiple care providers and providing them with information and facilities that leveraged their position as the main point of interactions. This problem and the benefits for patients could be seen in many quotes, such as those below. The first quote (from GB, V) represents the benefits:

> “By improving the communication, you know stopping the patient telling their story 5 times. You know patients assume that clinical people talk to each other; you know if I’ve talk to my GP I expect the secondary nurse to know everything. And you know that’s the whole point of trying to actually make that true.”

The second quote below, from ET, elaborates the existing problem in the system that is medical-centric:

> “But we’re operating as the hub, i.e., the medical side of things and the patient is the one bouncing around”

To make this demand influence the innovation development, the shared care team needed to first communicate the vision to patients and educate the public about this concept, provide new services for them, and make sure the messages and new services make sense to them. It seemed there had been doubts about whether patients had sensed any changes in their service, and if they understood what it could do for them in the future.
6.2.7. Change requirements and consequences

As change was a property of the innovation discussed extensively in the interviews, I categorised it separately to indicate its significance and delve into the detail. Participants described four dimensions of change that could be seen as the potential points of concern for them (Table 6-9): change unknowns, expectations, readiness, and implementation.

Table 6-9: Change requirements and consequences - convergent interviews

<table>
<thead>
<tr>
<th>Change requirement &amp; consequences</th>
<th>Change unknowns, Expectations, Readiness, and Implementation</th>
</tr>
</thead>
</table>

Change unknowns

There were instances about GPs’ fear of getting involved as they did not know what it might mean for their job, and why patients needed to see their health information. Participants even discussed GPs’ “distrust around who can enter stuff into the system”. GPs also did not know how their notes about the care plan or their communications with other care providers might be seen (i.e., whether they would understand the context). All the unknown parts of this process, that needed to be learnt and experienced to become clear, were described as scary for some clinicians.

There seemed to be a loop that prevented innovation development. It started from the first care provider who wanted to use the shared care environment. For instance, a GP in primary care did not know what information he should put into the shared care system to be seen by other care providers (secondary and community care). This would then prevent him using it and thus developing the new model of work.

Expectations

The other concern about change was around expectations that were set at the beginning of innovation. The timeframe that was dedicated for change implementation, the conditions in the context (e.g., users’ IT skills and understanding the self-management concept), and the size of change needed to be perceived as realistic. The other debate was regarding expectations of external organisations and stakeholders that needed to be involved in this change movement to provide layers of infrastructure change:

“...there was always an expectation that this was hard. There was always an expectation that there were bigger things that needed movement at a national level, into a regional level, into a local level. There needed to be movement coming from the College of General Practice, from medical schools, from nursing college.”
The quote above was from a participant (GA) who did not think the expectations were unrealistic or the difficulty of change was underestimated. However, she explained how they should have learned from small scale tests and dealt with emerging requirements and conditions before they continued the expansion.

**Readiness**

Readiness for change was also raised as a concern for programme team members. It included: access to the internet and computers; IT literacy; capability to try new software tools; learning new features of their existing IS; changing mindsets; and realising that it was about changing their work not just learning a new tool. Looking back at the adoption factors indicated that readiness could be associated with capability to change. Therefore, there could be a connection between the two categories of change and adoption. This connection needed to have many instances (maybe in the next stage) to be considered in the theory.

For instance, doctors were used to their old school thoughts. They had always told patients what to do. Changing their mindset to asking patients what they wanted as their goals and health plans required preparation. The following quote (from GB, V) describes how programme team members came up with a trick to help doctors to think differently when interacting with patients:

> “they realised they needed to have some sort of topics that would prompt people [Doctors] to think about things for the patients, about their mood, and feelings or whatever. So, there’s become the topic headings.”

One of the barriers for this preparation seemed to be the busy schedule of clinicians. They did not have time to sit back and think about their problems with the existing processes, and how they could improve it. Thinking time for a whole system change was needed before they got involved in the development of a new model.

**Implementation**

The data indicated blurred boundaries between development, implementation, and adoption of this innovation (section 6.2.5). It seemed that change requirements interlocked the activities in the three stages mentioned. The users needed to see a product to be able to experience and explore how they could work in a new way. Meanwhile, the programme developers needed to get the users’ suggestions and requirements to define this new model and develop the tool accordingly (the chicken and egg issue). Project management also wanted to make sure this change implementation happened within the schedule.
Some people expressed their need to have a mandate as change agents to be able to affect the implementation. Others believed it depended on individuals as the programme team members had to let clinicians find their way in changing their relationships with the shared care enrolled patients. It was not clear who needed to take responsibility to provide consistency in the fragmented work around the whole implementation. These issues were affecting the shared care model in bringing the change desired into the health system. Therefore, it was worth pursuing them in the next stage of interviews to unfold their impact on leadership of this initiative.

6.3. Discussion

In this chapter, I found seven main issues of the innovation development from the participants' experience. The innovation properties and its development stages were discussed along with the adoption factors and change requirements. In addition, people reflected on leadership issues and cracks happening in the innovation, that could affect the development process. The end users (i.e., patients) were discussed to a lesser extent and mostly in terms of what was missing for them in terms of leveraging their demand and impact in the development process.

Properties of innovation included newness, values, vision, innovators, change desired, ambiguity, and cost. These properties are also supported in the existing literature (Damanpour, 1991; Hwang & Christensen, 2008; Jacobides, Knudsen, & Augier, 2006; Press, 1969). The data indicated that there might be a link between leadership relationships (i.e., to change mindset of clinicians) and the acceptance of the properties of innovation, such as newness and change. Moreover, the emerging events and previous leadership experiences might impact perceptions of the change desired. The innovation needed time for investments and exploration until it could prove to be workable or not.

Change was as an important property of the innovation. It seemed to couple different stages of innovation development together. People did not know how to start the new process (i.e., adoption stage), but the new process needed to be developed by their contribution (i.e., development stage). Changing clinicians’ mindsets toward their relationships with patients seemed to be a preparation stage that needed to be done before they got involved in the development, maybe through the medical education system.

The three main stages of innovation found in the data were engagement, learning and development, and implementation stage. There were overlaps between them. The engagement stage could be seen in terms of marketing and commercialisation, plus initiation stage (Gopalakrishnan & Damanpour, 1997). The learning and development stage has also been referred to in literature, as generation of innovation that is divided into idea generation, project definition, answering to the problem, and
development (Gopalakrishnan & Damanpour, 1997). The data also indicated that external organisations could affect the implementation stage.

One of the interesting points about the adoption stage was that values and usefulness perceptions were more important than usability. Resources required, and specifically funding of the programme, were affecting the adoption, a finding supported in the literature (Kimberly & Evanisko, 1981). The funding needed to be provided and be compatible with the existing funding model. It was understood that there was disagreement on which group of users (patients and clinicians) should adopt change first in order to enable the other. This disagreement could have been related to doctors’ relative power over patients. This could be a link between the leadership category and adoption of innovation.

Another interesting category found was about cracks that were part the process and might emerge and change the condition. For instance, tensions and pressure on the teams to prove the success and to move toward fixed and planned outcomes could cause these cracks. These cracks were unavoidable but needed to be treated with care so as not to stifle the innovation. The objectivist push might have caused deviations from the core. It may not have been easy to decide which scale and pace of change was going to happen and which was more appropriate, but the process should be directed in such a way that people did not get frustrated by not seeing the change desired and, as being far from their expectations.

External collaborations were a major part of leadership relationships. Coordination and organisation, in addition to governance of the resources were other aspects of leadership helping to converge the directions. Another action related to leadership was readjusting the movements, after a while, to keep them aligned with the vision. Similar to many instances of individualistic studies of leadership in the literature (e.g., Bass and Avolio (1990)), the primary decision makers of the health system and the programme were part of the leadership process. Although mentioned to a lesser extent, it seemed important to reflect that internalising the values of the innovation (as Katz & Kahn describe, (1978)) would be a substitute for mandated change and would lead people to go beyond their self-interests and adopt high level values such as equity, and then act upon its realisation (Maslow, 1965). Hence, there seemed to be a link between leadership and adoption of innovation.

The last category, which was less highlighted by participants, discussed the social value of the new model, and its eventual benefits for patients. However, there was not a common agreement on whether the innovation should be patient-led, and how much they should impact the development process. The data, then, indicated a weak leadership in realisation of the end users’ demand or
patient-centred care. All the categories mentioned and the connections emerging needed to be validated in the next stage of interviews.

6.4. Conclusion and next stage

In this chapter, I answered to the focused question of this stage by representing the key issues, events and characteristics of the development process of the shared care programme as an innovation. The question was developed for this stage to pave the way toward answering the overall research question: How do patterns of behaviour in leadership and development of large scale innovations in a health IT context affect each other? The chapter, then, focused on the innovation development process as a precursor to exploring leadership of the innovation in-depth. In this stage, I summed up all the interpretations that resulted from the previous stages (i.e., observation and document analysis) to probe and validate them when they were raised in the participants’ conversations.

These findings can be used as instances of data when analysing the data from the next stage of interviews. It will help validate them and derive the most saturated categories at the end. Reviewing the emergent categories/subcategories revealed a number of links (connections) between them. These connections will be added to the connections found in Chapter 7, for verification. The most discussed connections will eventually contribute in theory building. The links seen were between innovation properties and adoption (via values and innovators as common concepts in both), adoption and change (via capability to change), adoption and leadership (via mandate and motivation), innovation properties and leadership (via change desired, vision).
CHAPTER 7. Identifying the core category of the theory

7.1. Introduction

In the previous chapters, I outlined three stages of data collection and analysis (observation, document analysis and convergent interviews) that have formed a baseline of insight about the innovation under study and its context, and contributed in answering the first objective of the study:

- What categories can be found in social processes of leadership and innovation development in a Health-IT context?

This chapter focuses on the leadership process using in-depth interviews, and then integrates these data with all the previous findings to build an abstract conceptualisation of the phenomenon under study. The aim of this inclusive approach to analysis is to let core categories emerge out of data. Eventually, this chapter will also contribute in answering the overall research question: How do patterns of behaviour in leadership and development of large scale innovations in a health IT context affect each other?

Glaser (1978) describes the importance of finding the core category as the focus of the research problem. The core category is grounded in the data and integrates other categories and properties to explain behavioural patterns. It is the central category related to many other categories and has explanatory power. The core category can be a Basic Social Process (BSP), which, as Glaser elaborates (1978, p. 93), is a process with stages that can be labelled by gerunds (i.e. turning a verb into a noun by adding ‘ing’). It indicates generation of the process over time and the stages explain variations in social behaviours.

Developing one or two core categories is suggested to build theory in a coherent way (Gregor, 2006; Urquhart, 2013). In this chapter, I represent how one core category emerged from detailed coding of the data, and constantly compare the concepts identified with those from previous data analysis. I will then use the emerged categories in Chapter 8, where the highlighted connections between categories will be discussed. Figure 7-1 indicates the whole analytical process of this research and clarifies the position of this chapter within that process.
As can be seen, the first stage of interviews provided categories to indicate where to collect more data, and what to explore (theoretical sampling) (Strauss & Corbin, 1998). The theoretical sampling enabled justification for the concepts emerged and allowed me to go along with the direction of the emerging storyline (Urquhart, 2013), or as described by Glaser, carry out a deductive analysis that is rooted in inductive inferences (codes) (Glaser, 1978, p. 38). Therefore, I used the seven categories emerged from the open coding and selective coding of the first stage of interviews. I then asked people to comment on them until the codes and properties reached saturation; I stopped enquiring about those categories when there were no new concepts or properties/dimensions that I could add to
them. Some of the categories appeared to be less important after data analysis was carried out in the second stage.

In addition to the emerged categories from the first stage of interviews, the results of document analysis, and initial participant observations also influenced the interpretation of the emerging categories, and again in finding core categories in the last stage. The results of document analysis and observations supported emerging categories with additional instances of data, and provided sensitisation in further theoretical sampling. That is why I have integrated relevant incidents of findings from the previous chapters with the findings of this stage.

In the following section, I describe the effect of using the relational perspective of leadership (Uhl-Bien, 2006), in my research and on conducting the in-depth interviews. Next, I present the core category emerged from the findings (interwoven with relevant incidents from previous findings) and its emergent categories.

7.1.1. Relational lens

As explained in Section 2.3.2, I have selected a relational lens for my study of leadership (Uhl-Bien, 2006). In the second stage of interviews, this relational lens guided my interviews as the theoretical perspective behind the data collection. In addition, I took advantage of this relational perspective to help distinguish what was of interest in this research and to draw boundaries around the research question (Urquhart, 1999). This approach was similar to that followed by Urquhart (1999) in her thesis, using “coding families”, a Glaserian concept (1978). Hence, my approach using the relational theory of leadership could be compared with using coding families to clarify the topics of the enquiry, rather than imposing a predefined relationship into the emerging categories by using a “coding paradigm” (for which Strauss (1987) has been criticised).

In this way, I developed topics of enquiry for the interview schedules. The relational theory of leadership suggests looking for relationships that contribute in organising work, when a change is about to happen. It also suggests exploring the decision making process and how it is controlled by people. Therefore, influential sources (physical and social entities), their organising relationships, and decision making processes were the initial topics of enquiry and a frame against which to examine the data. This conceptualisation was not forced because the topics were selected according to the research objective for this stage, and the theoretical assumptions behind the study. The following statements were the topics of enquiry in the second set of interviews:
• The interviewees’ influence in the direction of the programme, and;
• Relationships that contribute in organisation of the change, and;
• The decision making process

I conducted 21 in-depth interviews for this stage. The interviewees were either formal leaders and managers, or they had been introduced by other people as having a high contribution in implementation and adoption of the innovation. Only one interviewee had been interviewed previously as one of the key informants for the previous chapter, because she had insight about both the innovation development and leadership process.

7.2. The core category: Intervening in the health system

The core category emerged after this stage of open and selective coding was called, intervening in the health system. I labelled it as a gerund (i.e., intervening) because Glaser (1978) suggested using the gerund form of verbs to indicate that the core category is a process. In this section, I present the detailed explanation of the categories, subcategories, and some of the lower level concepts to reveal how the core category is grounded in data. Table 7-1 indicates the categories and subcategories constituting the core category.

<table>
<thead>
<tr>
<th>Core category</th>
<th>Categories</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervening in the health system</td>
<td>HIT Innovation</td>
<td>Innovation development process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Innovation properties</td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td></td>
</tr>
<tr>
<td>Leadership relationships</td>
<td>Influence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control (structuring behaviour)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Value creation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supporting change</td>
<td></td>
</tr>
<tr>
<td>Governance</td>
<td>Deciding about resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overseeing tasks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structures at different levels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reflecting leadership</td>
<td></td>
</tr>
</tbody>
</table>

Intervention is defined as, “The act or fact or a method of interfering with the outcome or course especially of a condition or process” (Merriam-Webster/Medline Plus Dictionary., 2014). The shared care programme was introducing a degree of newness and change (according to the first stage of interviews) into the New Zealand Health System (i.e., the Northern region of health organisations). It was interfering with the current model of work in clinical, administrative and legal processes. In other words, an innovation development process, and its required leadership and governance mechanisms
were intervening in this social system. This core category integrated other emerged categories, and explained their common behavioural patterns, as described in Glaser’s approach (1978).

The conceptualisation and abstraction procedure indicated the HIT innovation as part of a social process that was intervening in the health system (Leene & Schuyt, 2008). The term intervention in this study was not referring to a clinical programme designed to a framework, such as the Medical Research Council’s (M. Campbell et al., 2000), or a Behavioural Change Wheel (Michie, van Stralen, & West, 2011), as more commonly seen in medical research (Safari Mehr et al., 2014, November). This process of intervening referred to the general attributes implied in its definition: interrupting a series of events to solve a problem, promoting behavioural change, and targeting a group (S. M. Campbell et al., 2008; Dearing, 2009; Safari Mehr et al., 2014, November).

In the next section, I describe the core category in detail. In order to give more information about the quotes, I use the following coding system (Table 7-2) to indicate the participants’ affiliations.

<table>
<thead>
<tr>
<th>Codes</th>
<th>Meanings</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA</td>
<td>Group A member</td>
</tr>
<tr>
<td>FE</td>
<td>Former Executives</td>
</tr>
<tr>
<td>N</td>
<td>Nurse</td>
</tr>
<tr>
<td>IM</td>
<td>Implementation team</td>
</tr>
<tr>
<td>GP</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>PHO</td>
<td>PHO member</td>
</tr>
<tr>
<td>V</td>
<td>Vendor representative</td>
</tr>
<tr>
<td>DHB</td>
<td>DHB member</td>
</tr>
<tr>
<td>S</td>
<td>Specialist</td>
</tr>
</tbody>
</table>

It should be noted that apart from one person, the interviewees in GA were different people from those interviewed in the previous stage of interviews.

7.2.1. HIT Innovation

The first category emerging in the core category was HIT innovation. Stages of innovation development and innovation properties were two categories that emerged in the first set of interviews. In the second stage, I used the topics of enquiry and the categories that had emerged previously to ask participants to give their perceptions about the importance of these issues in the direction of the programme. The analysis indicated that the important issues in the HIT innovation
included its development process, properties and types of innovation (Table 7-3). In the following sections, I describe these subcategories.

### Table 7-3: HIT Innovation category, conceptualisation

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
<th>Selective codes</th>
<th>Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>b. Co-design (co-construction)</td>
<td>b. Co-design (co-construction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Evolving &amp; emergence</td>
<td>c. Evolving &amp; emergence</td>
</tr>
<tr>
<td></td>
<td>2. Development stages</td>
<td>a. Idea generation &amp; development</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Engagement (commercialisation)</td>
<td>b. Engagement (commercialisation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Implementation</td>
<td>c. Implementation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Adoption</td>
<td>d. Adoption</td>
</tr>
</tbody>
</table>

| Properties of innovation | 1. Change                          |                             |                             |
|                         | 2. Newness                         |                             |                             |
|                         | 3. Problem solving                 |                             |                             |
|                         | 4. Other properties: values, vision, innovators, cost (raised in Chapter 6) |                             |                             |

| Type                     | 1. Basic tool (product)            |                             |                             |
|                         | 2. Process                         |                             |                             |
|                         | 3. Service                         |                             |                             |

**Innovation development process**

In this section, I present the subcategory, innovation development process, and its two selective codes (properties): characteristics of the development process, and development stages. Moreover, I discuss some of the emerging connections between the categories where applicable.

1. **Characteristics of development process**

Table 7-4 summarises the conceptualisation of the characteristics of the development process discussed in this section.

### Table 7-4: Characteristics of the development process - conceptualisation

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Open codes (examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Complexity</td>
<td>Multi-organisational process, different perceptions, Action-Research mix, interrelated issues, shift in thinking, change in administration of workflows, overlapping processes, co-construction of the idea (raised in Chapter 4), applying evaluations (from Chapter 6)</td>
</tr>
<tr>
<td>b. Co-design (co-construction)</td>
<td>Volunteer innovators, testing technical issues, filtered feedback, hearing voices, partnership</td>
</tr>
<tr>
<td>c. Evolving &amp; emergence</td>
<td>Emergent needs, emerged vision, unpredictable future (also raised in Chapter 4), flexibility, learning process, not a fixed idea (raised in Chapter 4)</td>
</tr>
</tbody>
</table>
a. **Complexity**

This innovation was being developed by the contributions and collaboration of a number of organisations within the health system of New Zealand. These numbers also increased during the expansion phase of the programme. The increasing number of collaborators was one of the aspects of the complexity of the development process. Accountability, diversity and technical requirements were examples of multi organisational complexities mentioned (see the quotes in Figure 7-2).

People involved with the programme did not necessarily have similar perceptions about what the promised outcome was. It could be interpreted that their internalisations of the vision, and projections for objective outcomes differed, as can be seen in the following quote from the leader of GA:

“...for some people they thought that the shared care planning tool was going to be a bigger system, a much, have a lot more features and functions than what we were offering in the end.”

(GA)

He was referring to differing perceptions of potential users of the innovation about the functionality of the IT tool they were going to use. A nurse, who was using the IT tool, also referred to perceptions among different group of care providers about the concept of care planning:

“Now care planning I don’t think is well understood. It means different things to different people. From a GP’s perspective I think it’s more about a treatment plan, what medications are they on, all that sort of stuff. ... From a nursing perspective and long term condition management it’s more about what’s important from the patient’s perspective” (N)
Moreover, another member of GA mentioned that those who were known as leaders and owners of the programme, also held disparate perceptions about the original intention of the change programme. My observation notes had instances that supported the existence of confusion, and discussions regarding clarifying the vision and converging members’ perceptions.

The nature of the programme also added to the complexity of the development. It was an Action-Research work (D. J. Greenwood & Levin, 2006), so started from a small scale with a basic understanding of the requirements and even the outcome desired. Implementation of the basic IT tool on a small scale was followed by evaluations to gain more insight about the change desired and how it could be implemented. The evaluation team applied a framework to evaluate the innovation from technical, social, and economic aspects, as well as how the outcomes were making a difference in reality. The observations, described in Chapter 4, indicated the complexity of applying findings from the evaluation into the decision making processes of group A, especially because the IT vendor was part of the group. One of the participants explained the complexity of the evaluation team’s work:

“So these guys were not only researching the outcomes, did it do what it said it would do, but also the methodology. So, so it was quite a complex piece of research anyway,” (from GA)

In addition, it was hard to follow the evaluation’s impact on the innovation development process, especially at the lower levels of implementation. The quote below is an extract from the first set of interviews, and explains this aspect [I have interwoven findings from different chapters for the purpose of integration and to allow the most significant concepts to emerge]:

“And there was probably a bit of a disjoint between what was an evaluation, and action research evaluation and the whole programme, and the vision and the governance, and the implementation of a programme. And I think there was tension around what they were able to do and what the evaluation would feed in, in an action research.” (from GA – ET)

The following sample quotes in Figure 7-3 imply other dimensions of the complexity. There needed to be a shift in people’s thinking to get them involved in the new model. For instance, there was a strategy used in some of the DHBs, referred to as Localities, which was in line with the shift required in the thinking of clinicians for this change. The strategy expected care providers to work more collaboratively across different settings, from primary and secondary care, based on their geographical area to achieve better quality of care for patients. Other examples below indicate the ways in which people needed to change their views and presuppositions at work. Achieving all these changes within the limited time allowed for the programme, added to the complexity of the work:
The IT tool was last contributor in the complexity category. Designing the IT tool for a variety of users added to the complexity of this stage. Traditionally, healthcare professionals in each secondary care service, such as Heart Disease, Diabetes, or Respiratory care services, had tended to have their own customised view of the patient’s health information. In the new shared model, they needed to look at one technology interface and work through the care planning procedure for the patient. This made the IT team’s job difficult in dealing with the users’ requirements and also the programme’s expectations. The other source of complexity in the IT tool design was interoperability among ISs. Interoperability is the term used to refer to transfer of data from one IS to another, with a degree of compatibility/use (e.g., structure, and semantic interoperability) (HIMSS, 2013). The technology providers were required to follow the existing national standards for data exchange within the health system. These examples indicate some of the complexity of work at the micro level.

b. Co-design

Co-design (co-construction) was another property of the development process, as found in the observations as well. The leader of the formal leading group noted how this lesson was learnt from existing HIT evidence:

“I sign up to the IHI [Institute for Healthcare Improvement] principles, so the principle there is that in order to get long term sustainable investment in e-health that’d actually make a difference, you need clinicians to co-design and co-produce and live and breathe the operation of new, these new IT tools that are trying to help better delivery of high quality care” (GA)

Therefore, it was critical for developers to establish procedures that allowed users’ input into the design and development of the idea. As can be seen in the quote below, a meso-level manager within
one of the DHBs involved clarified their expectation of seeing the co-design characteristic incorporated into the innovation development:

“What we wanted was a strategic partner that’s going to walk this sort of journey with us, recognising that no one else around the world has really done it either. And that’s what [the IT vendor] brought to the table from our point of view,...” (DHB)

The participation of clinicians in such Health-IT initiatives gave them an “opportunity to think differently”, as mentioned by the leader of group A. It also affected the leadership of the programme as it provided a place for innovators to structure a new way of work: “It’s about helping you structure you conversation with a patient”. This agreed with relational perspective of leadership.

Participants who were volunteer innovators put in their own time to realise this vision, without applying any cost to the system. The interpretation could be made that the value of the innovation perceived by them played a critical role. This inferred a connection between leadership (i.e., value creation) and the co-design characteristic of the innovation development.

The data indicated some barriers for the co-design process. If there was not an internal lever for a person’s participation without being funded for the work, people may have seen it as a barrier to work with a new IT tool which was not even fully designed and developed for the value it was promising. A participant associated the co-design process with market testing and explained the health system had low tolerance “for these new innovations that come to them not market ready”. It could be seen that not only was the funding a barrier, but users’ lack of understanding and awareness of their role as innovators, rather than adopters, was another barrier. I elaborate more on this issue in later sections of this chapter (in leadership and conflicts).

c. Evolving and emergence

The evolving and emerging nature of the development process was the last characteristic conceptualised. The innovation started from a basic idea, and it was not possible to predict and plan its direction, especially as no one else had done it before. Each part of the work also had consequences that affected other components and things could change and evolve. Generally, the development process was unpredictable and followed a learning process.

For instance, by going through the first small scale tests, people realised that this could be a bigger change programme for quality of care improvement, rather than just an IT-based project (that may or may not cause such change). Users also started to realise what would make their work easier. Some new roles evolved and were indicated as being important:
“...it gets very hectic and the opportunity to sit back and take time to think and plan and do anything proactive is quite limited. So that’s where the notion of a care coordinator’s really important” (IM)

Perceptions changed during the implementation. One of the formal leaders talked about their perception of the main benefit and how it changed during this time. The emerging issues needed to be taken and fed into the strategies to help structure the way, otherwise the change could not be organised or orchestrated. This was one of the connections between leadership and the innovation development. It seemed there were not sufficient relationships to re-adjust to emerging features of the shared care programme:

“They're not leading the strategy that involves this. What’s happened is that this is emerging and bubbling away.” (from GA)

“...there’s not a programme or project team, there’s no clinical leaders who are sitting around the table like ... from primary care, ... and dedicate project worker plus a few different managers who feed into that. Who then say ok, what is that we’re trying to do? Ok, where we’re at?” (from GA, same person)

This issue was compatible with findings from the observations (Chapter 4). Most of the project management meetings seemed to have a technical and implementation level focus. However, there was no over-seeing or leadership team that had the authority or power to use the implementation feedback and plan for the adjustment of the programme’s strategies/goals. Group A was informed about any issues arising by the project management team’s leader. On the other hand, Group A was a very high level decision making group to be dealing with such conversations. The timing of their meetings (around every six weeks) was not adequate for the depth of work required for reviewing and updating clinical strategies and implementation objectives. This blurry situation (mentioned by a participant) needed to be governed and overseen. An example of good response was seen when a meso-level governance group started to define and track small and measurable goals, and to decide about further developments based on the emerged situations (“traditional means”).

In summary, in this section, I have presented the first selective code in the innovation development process subcategory, which reflected characteristics of the development process. These characteristics were complexity, co-design, and evolving and emergence. Complexity is a common characteristic of innovation processes, especially when organisations try to be quick in responding to changes in the environment, and innovative (high rate of innovation development) (Damanpour, 1991; Damanpour, 1996). For instance, the structural complexity of organisations involved with the innovation development (e.g., number of settings involved and number of hierarchical ranks) positively increases the depth of knowledge and, therefore, chances of innovation development (Damanpour, 1996). As the shared care programme was implemented across multiple healthcare
organisations with different structures (i.e., private and public), structural complexity was expected to affect the innovation. Specialisation and professionalism are also known to be associated with complexity (Damanpour, 1991). These factors could also have contributed to the concept of complexity, that emerged later in the theory.

In this research, co-construction of the idea (the co-design characteristic) and the Action-Research (AR) model of the project also emerged as examples of complexity in the shared care programme. AR is associated with complexifying interactions as it blurs the boundaries between the researcher and the subjects (Sumara & Davis, 1997). Moreover, the assumptions and components of AR are aligned with complexity theory (Phelps & Hase, 2002). The commonalities between these two are in being open and nonlinear, the emergent nature of change, self-organisation, the impact of interactions, unpredictability, and feedback (Phelps & Hase, 2002). It can be said that the co-design characteristic of the programme also contributed to all the components mentioned and made the programme context a complex system.

In the next stage, the second subcategory of innovation development process, stages of development, are explored.

2. **Innovation development stages**

Moving from characteristics of the development process, I discuss the concepts relating to innovation development stages in this section. Considering the emerging concepts in Chapter 6 and the relevant discussions on the innovation development stages found in this chapter, the following concepts emerged (Table 7-5):

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Open codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Idea generation &amp; development</td>
<td>IT tool design</td>
</tr>
<tr>
<td>b. Engagement (commercialisation)</td>
<td>Getting them to listen, sense of ownership, awareness, observing leaders, communication cost (raised in Chapter 4)</td>
</tr>
<tr>
<td>c. Implementation</td>
<td>Change management</td>
</tr>
<tr>
<td>d. Adoption</td>
<td>Individual concepts, social concepts, and technical issues</td>
</tr>
</tbody>
</table>

One of the main points about the development process is that these stages had a lot of overlaps. Therefore, in explaining each stage there are references to other stages too. I try to stress the distinctive aspects of each stage however.
a. Idea generation and Development stages

The idea generation for the shared care project started long before commencement of the programme. It was at the time different groups of stakeholders were noticing the difficulties in, and disjointed, provision of health services, especially for patients with chronic conditions. The IT vendor was one of the stakeholders who started to work on the idea of collaborative care. They wanted to provide an IT solution for a better connection between care providers involved with care of a patient. On the other hand, the concepts of integrated care, continuity of care and patient-centred care appeared gradually in the discussions of clinical and management teams within the three DHBs in the Auckland region. After commencement of the programme and its test phase, some of the managers in the Northland DHB, the last DHB in the Northern region of New Zealand to join the programme, also engaged with these discussions and became involved with the development stage.

In addition, after commencement of the programme, the DHBs and the organisations involved with management of this project went through cycles of idea generation (implied by one of the interviewees), to understand how they could respond to the variety of user requirements. They also needed to realise what the new model of work would look like. Hence, they engaged potential users (volunteers) of the innovation into the co-construction cycles of the innovation. This aspect could be seen as more around idea development than idea generation:

“...where we’re going to orientate ourselves around patients and we’re going to do it here in a more integrated way, and now we need a tool that enables us to do that” (V)

Therefore, this overlapping stage of idea generation and development continued iteratively with small tests and feedback loops (learning via evaluations). It can be seen that these stages were neither linear nor sequential, and boundaries were blurred. Finally, designing the IT tool was part of the development too. As discussed in the characteristics of the development process, the IT tool design played a significant role in the complexity of the process, in developing the basic tool into a desired tool, based on the emerging shared care model.

b. Engagement (commercialisation)

The next stage was engagement (commercialisation). As part of the actions for engagement, the programme held various public and professional forums around the three DHBs to introduce the main concepts. These activities provided opportunities to find interested groups and individuals, who might have the authority to promote this idea in their working environment. The aim was to provide a sense of ownership among the potential adopters of the innovation, as they had the ability make a decision based on the values perceived. This sense of ownership was indicated as helping engagement in the leadership of the innovation too. A nurse, who was known as an influential person in adoption and
development of the innovation, implied this sense. Their small team’s decision making in a primary care setting was based on their thoughts about usefulness of the integrated care approach that “could actually make a difference”.

The formal leaders of the programme (in group A) also participated in the engagement process when they talked to their counterparts in other organisations, or with those who indicated similar interests. Some of them also raised awareness about the new service with their own care providers, or their family members.

It was not always enough to raise awareness about the benefits of the change to get people engaged. It was understood that work motivations played an important role. The aspects that created value for different clinicians were not the same. People could only get engaged if they saw a value that motivated them. Sometimes, programme team members needed to find groups/forums that already existed among clinicians as a way of not causing extra costs for clinicians, and to get people to listen:

“It’s always problematic because on the one hand it’s a cost to them and on the other hand how do you actually get value for money out of the funding that’s provided. But a lot of them wouldn’t even engage unless we started talking money to begin with” (IM)

As another example of engagement activities, an observing leader sat in the programme meetings for a while and got involved with the conversations whenever it related to his specialty. Later, he became a link for the programme into his working environment, engaging others in a way that was compatible with their requirements.

As found in the observations and convergent interviews, the presence of the IT vendor in group A, and their existing contract with the DHBs, enabled them to share commercialisation efforts with other stakeholders. This group was a place for decision making around which groups/organisations to approach, and the scope/budget of the implementation. The vendor was then able to understand the other stakeholders’ viewpoints and, in turn, to inform them of their own issues and concerns. The managing company was also part of this process as they were managing working groups responsible for contacting potential users (health care settings), to engage them with the innovation development process.

c. Implementation

The implementation stage had some distinct activities, mostly around change management. It should be noted that the implementation concept depicted interactions that happened closer to the end users. However, as my research was not focused on the service innovation (the new service developed
for patients), there was not enough data about how the service was implemented. Table 7-6 indicates how change management was conceptualised from open codes, as part of the implementation stage.

Table 7-6: Implementation stage: change management, conceptualisation

<table>
<thead>
<tr>
<th>More analytical open codes</th>
<th>Open codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change preparation</td>
<td>Destabilising a relationship, real test, knowing local requirements, seeding processes, resistance to change, change management roles</td>
</tr>
<tr>
<td>Implementing the strategy (objectives and tactics)</td>
<td>Starting from the core processes, starting from the most common feature, filling the detected place for change</td>
</tr>
<tr>
<td>Balancing</td>
<td>Estimations and real experience, manageable bites, responding to emerging needs, consistency with relevant initiatives</td>
</tr>
<tr>
<td>Meso-level management</td>
<td>Anchoring the process change, anchoring the technology product, mandate</td>
</tr>
<tr>
<td>Goal tracking</td>
<td></td>
</tr>
</tbody>
</table>

Change preparation was a property of change management that mostly described changing relationships between actors (care providers together, and with patients), from destabilising what had traditionally happened (questioning the current way and offering new ways). This seemed to be a precursor for implementation. Traditionally, in the healthcare environment, clinicians have had more power (i.e., expert power (French & Raven, 1959)) over patients. As one of the interviewees clarified, change to this power imbalance was required, by giving patients this opportunity to be more responsible and involved in their own care planning procedure. There was a debate around how much information patients should input into the patient portal and how they should contact their care providers. These conversations and interactions were happening within the implementation process for patient-doctor relationship change.

People also had suggestions about implementation, such as starting with fewer actors involved, letting the interaction form for a while and then drive itself into the next level of interactions.

“So, if we’re wanting a system that’s all connected, ... if you make best use of it from a care planning perspective with the patient and get them connected, in the first instance you’ve got a team of two” (GA)

This can be seen as another example of preparation for change by enacting “seeding processes”. Although people referred to many instances of change management properties and requirements in this programme, there were only two instances of data referring to their change management roles. Lack of attention to these roles could be a reason behind some of the problems raised by participants about the implementation.
There were different tactics for implementation of the strategy for change within healthcare settings. Some participants explained their regional tactics such as starting from the core processes (of their district), starting from the most common feature (among the variety of users), picking the features most taken up, and starting from the existing networks. It appeared that one of the most successful tactics was to take a middle-out approach, or to fill a space already marked for change, as seen in the implementation approach followed by one of the DHBs. They had an existing care programme that was targeting a wider group of patients (than the programme), in response to an existing gap in their healthcare services. They had formed a structure to lead and manage the implementation of that programme. When they realised that the tool provided by the shared care programme could provide a communication platform for them, and might add value in terms of enabling process change, they fitted it within their programme and changed their structure.

Moving to another change management concept, it was understood that change needed to be balanced during the development. Balancing means managers needed to consider reviewing what was emerging during the process, to be able to adjust their estimations closer to the reality. They also needed to divide the change into manageable bites. Change in innovation development could not be easily managed by planned approaches. It also required revisions and balancing of the schedules to match with the expectations of the programme owners.

The issue of consistency among relevant initiatives (other Health-IT programmes) did not seem to have been noticed much by the interviewees. The question that came to mind was whether consistency could be expected when the intervention was going to be developed through an innovative process. The unpredictability of this process might make it difficult for other initiatives to trust in it, and change their approach in a way that supported consistency. This can be seen as a balancing challenge in such innovations.

I finish the implementation stage with another example of change management activities that occurred in the meso-level. Meso-level management was required to anchor the process change and the technology product within local settings. It meant finding out where in the current structure the new product could be used and what processes or services were able to be involved with the change process suggested by the innovation.

d. Adoption

The last stage of innovation development was adoption. As in the convergent interviews, the data in this stage also supported the significant role of adoption and behavioural change issues. Adoption was about the product, the process, and the service innovation. Patients were supposed to use a new tool
in their interactions with care providers and change their behaviour in managing their health conditions. Health professionals also needed to adopt the technology and the new process of healthcare delivery. In addition, they needed to change their behaviour toward other healthcare providers involved with care of the patient, and the patient and their families too. The experience of patients, however, was not within the scope of data collection for my study and is one of the limitations of my doctoral research.

I categorised the adoption issues into three groups: individual, social, and technical. The most highlighted adoption issues were individual concepts. In this group, individuals’ perceptions were the main concerns in the decision making of people about the innovation. They included usefulness, usability, adoption-use preferences, cost perceptions, IT capability, and previous experience. The next group of adoption concepts emerging were social concepts, such as capacity-opportunity to change, engagement, funding, training and promoting, buy-in authorities, durability, and social pressure. In this group, interactions of people within their work environments were the drivers of concerns. Technical issues were less important according to the number of instances. Table 7-7 shows examples of selective and open codes that formed this category.

<table>
<thead>
<tr>
<th>Concept</th>
<th>More analytical open codes</th>
<th>Open codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adoption concepts</strong></td>
<td>Individual</td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td>usefulness of change (also raised in Chapter 6)</td>
<td>tool usefulness, scope of application</td>
</tr>
<tr>
<td>Usability</td>
<td>number of ISs, intuitive tools, pull not push, familiarity</td>
<td></td>
</tr>
<tr>
<td>Adoption-use preferences</td>
<td>decision making</td>
<td></td>
</tr>
<tr>
<td>Cost perceptions</td>
<td>frustrated enthusiasts, cost of getting them to listen</td>
<td></td>
</tr>
<tr>
<td>IT capability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaboration in testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived compatibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willingness to change</td>
<td>raised in chapter 6</td>
<td></td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td>Capacity-opportunity to change</td>
<td>workload, existing organisational support, pressure (raised in Chapter 6)</td>
</tr>
<tr>
<td>Engagement</td>
<td>sense of ownership, observing leaders, mandate (raised in Chapter 6)</td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>resources required (raised in Chapter 6)</td>
<td></td>
</tr>
<tr>
<td>Training and promoting</td>
<td>learning by practicing</td>
<td></td>
</tr>
<tr>
<td>Buy-in authorities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing policies-structures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisational synergy</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Technical</strong></td>
<td>Semantic confusion - interoperability</td>
<td>- incomplete features</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Adoption concepts – Individual:

I explain some of the individual concepts that were more informative for this theory. Usefulness was an important adoption factor from the interviewees’ perspectives, both for this stage and in the convergent interviews. In this case study, usefulness was not restricted to the IT tool or the product innovation. It also included perceptions of users about the usefulness of change, as the innovation had a hybrid model. People also considered the scope of the application in their views of usefulness. The examples mentioned by the interviewees, in relation to the scope of the application, included what the target group for the new service was, which secondary/tertiary services were involved, and what gaps the tool covered.

Regarding usability, the interesting point was that apart from the tool's intuitiveness and easy-to-use characteristics, people considered the number of ISs they were using at work, and the pull (demand) that came from other users without the need to push the benefits to them.

Adoption–use preferences was another selective code, meaning how people chose to use the adopted innovation when it came to prioritising works in hand. It referred to “clinicians’ perception of clinically more important works in case they need to prioritise their jobs” (Safari Mehr et al., 2014, November, Discussion section, para. 9). People also associated costs to their involvement with the innovation. It referred to the time and effort required to learn the IT tool, to participate in the development of the new model, and to get people to listen to the idea of the innovation. It also referred to the cost-effectiveness of buying the technology tool.

Adoption concepts – Social:

Among social concepts of adoption, capacity/opportunity to change was highly raised. The heavy workload in primary care practices was one of the examples that might mean less capacity for primary care providers to get involved with new programme. Current transitions or mergers in the structure of health organisations, and the priorities of other Health-IT initiatives, were other possible factors limiting the opportunity for innovators to take an active role in this initiative.

Engagement activities were other social factors that affected the adoption stage, as found in Chapter 6. People’s response to the innovation depended on the way it was presented to them, and how they were approached. If the engagement stage provided a sense of ownership, it could affect their decision making around becoming engaged and adopting the innovation. For some people, work motivations engaged them. However, some of the programme members thought they should have had a mandate to get people involved with the programme (Chapter 6).
Clinicians’ perceptions about the durability/temporariness of the initiative was another important adoption factor. People did not want to put their time and effort into a change programme that was not perceived as a long term change within the sector. Funding was the other social factor, and differed from individuals’ costs. In this context, it referred to the organisational arrangements to pay their employees for the financial costs of the development, or the implementation of the innovation.

Adoption concepts – Technical:

The reason I separated technical adoption issues from the others was that they were both individual and social. Users’ problem with the under-developed tool, that could have many technical problems and incomplete features, was an individual-technical issue. On the other hand, provision of interoperability between this IS and other existing ISs in the health system was an example of a technical-social issue contributing in the adoption of the innovation.

In summary, in this section I have described the second subcategory of the innovation development process, labelled innovation development stages. The stages included idea generation, idea development, engagement, implementation, and adoption. These stages were similar to those explained by Baregheh et al. (2009), in their review of definitions of innovation. The present study indicated that these stages mostly overlapped (e.g., idea generation and development, or implementation and adoption), with blurred boundaries between them. Moreover, these stages were not sequential. The development stage was conducted iteratively with small tests and feedback loops. Participation of users in the idea development (i.e. co-construction) could be explained using an open-collaborative model of innovation development, as described by Baldwin and von Hippel (2011). In this model, the development of the innovation includes contribution of users and the result will be open to everyone. The product innovation (the tool) was not a predeveloped tool and was developed with a producer model (as in (Baldwin & von Hippel, 2011)) in which the vendor accepted the cost of design in order to sell it.

It seemed one of the challenges in the development stage was having both producer and open-collaborative models evolving together. However, the IT vendor was able to share commercialisation efforts with other stakeholders, by being contracted by the managing company and the DHBs involved. Therefore, the engagement activities that occurred through the levels of the programme, and by different stakeholders (e.g., the managing company and clinical champions), were also part of the commercialisation of the IT tool. This reduced communication costs for the vendor and allowed a focus on the development and design aspects. The implementation stage was mostly discussed in reference to change management activities. This change management included change preparation, implementation tactics (such as starting from core processes), balancing (manageable size of work
and refining estimations), meso-level management (anchor innovation to the existing processes or services) and goal tracking.

The adoption stage was discussed largely in this stage of interviewing. The concerns were around individual, social, and technical issues. Among individual issues of adoption, people talked about common adoption factors seen in the literature, including usability (Davis, 1989), usefulness (Davis, 1989), previous experience (Venkatesh, Morris, Davis, & Davis, 2003), and compatibility (Backer, Liberman, & Kuehnel, 1986). Moreover, clinicians indicated their concern about adoption–use preferences, meaning that while they adopted the innovation, they could prioritise other work at that time based on their preferences. This factor could be a use factors, as Lin (2003) describes. She explains that after the adopters’ decision-making and when the technology is implemented, adopters’ perspective about the experience affects the use. These are called use factors (Lin, 2003). Based on the findings, I would argue that the adopters’ prioritising, or preferencing, in relation to different tasks might also be a use factor.

Among social adoption factors, funding could be seen as perceived financial costs or organisational resources required, as found in research by Kuan and Chau (2001). Social pressure was another adoption factor, previously described in the form of pressure from governments (Kuan & Chau, 2001). Discontinuation of a technology is a factor that might cause adopters to replace the technology with a new one (Lin, 2003). In my study I found that even before adoption, people considered the durability of the innovation in their decision making. The study also indicated that the engagement stage can be a social adoption factor that impacts adoption decisions.

Turning from the innovation development process to the other subcategories of the HIT innovation, I explain properties of innovations in the next section.

Properties of innovation

The next subcategory of HIT innovations was properties of innovation (refer to Table 7-3). Properties of innovation have been discussed both in Chapter 6 and in this chapter. They include a group of selective codes explaining these properties. The selective codes were change, newness, problem solving (reason for change), values, vision, innovators, and cost. I have explained most of these properties already, especially in Chapter 6. Therefore, in this section, I add informative dimensions found in this stage.

The property that emerged more than the others, in this stage of interviews, was change. People contributed their opinions regarding the degree of change, the ongoing nature of change, the change agents (roles and responsibilities), and unknown aspects of change.
As mentioned in Chapter 4, the programme was going to bring a radical change through an evolutionary model. In the previous stage of interviews, people reflected that it was practical to have small improvements. When the perceptions found in this stage of interviews were added, the degree of change in this innovation was both transformative/radical change and continuous improvements in the current model of care. People interpreted the degree of change which was going to happen differently (see quotes below from two participants).

“So that is a combination of system change and process change, and to a certain extent a funding model change and roles and responsibilities change.” (V)

“And even the concept of having the patient in control of their health information and setting goals with the assistance of clinical team members, that is not innovative either. So it’s making better use of, current use of better technology.” (S)

In addition, many participants stressed the ongoing nature of this change, regardless of the final degree (either small improvements or radical change).

“So we’re trying to keep that sort of longer term view of this as a step by step change process that will never reach, you know, perfection. But actually we get it good enough to start and then just keep on improving it, that’s the idea.” (DHB)

In the end, innovation needs to have a clear reason for change, meaning it should solve a problem in the system. This property of innovation is the least emphasised property in the literature, in contrast with newness. For instance, Baregheh et al. (2009) found the word ‘new’ occurred significantly more than the word ‘improve’ (76 vs 6), in their review of existing definitions of innovation. Similarly, the word ‘value’ only occurred twice in their database of definitions (Baregheh et al., 2009). It can be said that some of the properties found in my study extend the existing literature, in revealing that innovation is not only new and brings change, but it solves a problem and has vision and values. Regarding the cost of innovation finding in my study, Hwang and Christensen (2008) defined a disruptive innovation as an affordable product or service. They believe that healthcare systems need to provide disruptive innovations that are simple, affordable, and available for everyone (Hwang & Christensen, 2008).

Type

The last subcategory of HIT innovation was type of innovation. As discussed in Chapter 4, the innovation was a hybrid type with three aspects of product, process and service. This stage of interviews also supported what was found previously, but did not add anything new. Moreover, there were not many instances of data about type of innovation, which can be seen as less impact of the type on leadership of innovations.
In section 7.2.1, I explained the HIT innovation category and its subcategories, as the first category of the core category (i.e., intervening in the health system). In the following section I describe the second category; leadership relationships.

### 7.2.2. Leadership

In this section, I represent the detailed explanations of the findings relevant to leadership relationships, which I enquired into and analysed from my constructionist perspective of leadership (refer to section 2.3.2). The findings were categorised into four relationships that contributed in the organising and structuring of the change brought about by the shared care innovation. These relationships were influence, supporting change, control (structuring behaviours), and value creation. Table 7-8 summarises subcategories and concepts that contributed in the emergence of this category.

#### Table 7-8: Leadership category, conceptualisation

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
<th>Selective codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Influence</td>
<td>1. The vision (also raised in Chapter 6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Formal influential hub</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Power and authority</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Informal influencers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Strategies for big momentum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. External influence (also raised in Chapter 6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Levels of influence</td>
</tr>
<tr>
<td>Control (Structuring</td>
<td></td>
<td>1. Meso-level leadership</td>
</tr>
<tr>
<td>behaviours)</td>
<td></td>
<td>2. Decision making (also raised in Chapter 6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Political behaviours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Consistency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Goals and strategies</td>
</tr>
<tr>
<td>Value creation</td>
<td></td>
<td>1. Work motivations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Communicating reason - urgency for change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Creating the vision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Usefulness perceptions</td>
</tr>
<tr>
<td>Supporting change</td>
<td></td>
<td>1. Indicating support and binding (also raised in Chapter 6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Decision makers’ consensus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Putting change first</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Risk taking</td>
</tr>
</tbody>
</table>

It should be noted that in Chapter 5, I inferred all the subcategories of leadership relationships from the document analysis, plus their different emphasis in each phase of the programme. In this stage, though, I provide the rich explanation of the meanings behind communications and relationships.
Influence

The most important relationship that emerged as a leadership relationship was about influence. People behaved in response to the sources of influence. These sources were individuals, organisations, vision, strategies, and power/authority. Table 7-9 indicates examples of open codes that led to the properties and dimensions of this subcategory. I ordered the selective codes in Table 7-9 based on their relative importance (the number of instances of data).

I need to add that motivation, including financial rewards, was the last but not least important selective code in this list. Hence, I excluded it from the list of important influential sources. Motivation also emerged in Chapter 6 (section 6.2.4) among leadership concepts that could eliminate the need for a mandate. However, having fewer instances of it as an influential source, persuaded me that I might find a better place for this selective code. Later it can be seen that work motivations were one of the significant concepts within the value creation subcategory.

<table>
<thead>
<tr>
<th>Selective codes</th>
<th>Open codes (examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The vision</td>
<td>Communication, information power, empowerment (transcendent value), better quality, real-time</td>
</tr>
<tr>
<td>2. Formal influential hub</td>
<td>Objectivist leader, top leader’s behaviour, passionate influential people, choosing champions, situational engagement, networking, desire to lead, clash of interests</td>
</tr>
<tr>
<td>3. Power and authority</td>
<td>Social influencers, division in a group of decision makers, non-compliance, competing for ownership</td>
</tr>
<tr>
<td>4. Informal influencers</td>
<td>Peers’ experience, individual-dependent success, being an insider, promoting and awareness, bridge technical and business, early adopters’ role</td>
</tr>
<tr>
<td>5. Strategies for big momentum</td>
<td></td>
</tr>
<tr>
<td>6. External influence</td>
<td></td>
</tr>
<tr>
<td>7. Levels of influence</td>
<td>Local leadership, connecting strategic and local levels, strategic level leadership</td>
</tr>
</tbody>
</table>

1. The vision

When people started to talk about the programme as an innovation, their first reason indicating why they had joined this movement was related to the vision. Obviously their perceptions of the usefulness of the IT tool led to their adoption of the innovation too. However, before they got to the point of knowing the technology, the vision could cause people to consider participating in the work of innovation on top of their everyday job, and mobilise them to push themselves into an unpredictable, new process of change.
The vision, which has been described previously, can be summarised as having the following aspects: communication, information power, real-time information, patient empowerment, and better quality of care. Communication in the vision was about enabling people to take advantage of the power of information. Patients would be more aware of their health conditions and be able to have access to reliable health knowledge sources (websites, documents and reports suggested by their care providers), and therefore better manage their condition. GPs would be able to get information about what procedures were happening to their patients in other secondary and tertiary services, in addition to the medications prescribed and the follow-up actions required (either by themselves, patients or other care providers). Even pharmacists, other community service providers and allied care providers would be able to join the care team and use the IT tool. Therefore, everyone in the care team would have access to this updated, real-time information, allowing better integration of the health care services around the patient. All the effort was toward reaching the transcendent value of patient empowerment (via realisation of patient-centred care).

“we as health professionals have a responsibility in making... patient interactions with health professionals as easy as possible and to, to share more power with them to, to make that possible” (GA)

The last part of the vision was to provide better quality of care by changing the model of healthcare delivery. This promise of the new model was fewer patient presentations at secondary services, better access to services, and an integrated way of work. One of the interviewees, a primary care nurse, elaborated that part of this quality of care would be as a result of improving their relationships with patients (through the programme). Hence, this was her reason for accepting doing extra work because the aim was to make a difference; and it could not happen unless good relationships were developed over a long period of time.

2. Formal Influential hub

Another source of influence came from group A, that acted in a similar way to a network hub. As explained in detail in Chapter 4, they were a group of stakeholders who were primarily selected (or applied) to guide and oversee the programme. Each member was a leader or manager in their own organisations, or they were well known clinicians who had academic or practical experience in the area of the programme.

As also found in the observations (Chapter 4), these people had an influential position in their social network. For instance, three clinical champions were selected to become representatives and promoters of the innovation. They used the IT tool and participated in the meetings and forums to communicate the vision and their perspectives, as insiders, to their peers. They could also reflect their
understanding of the way innovation was being developed and comment on the issues raised in group A, based on their clinical insight. Other examples of these relational properties of the influential hub can be seen in the open codes and quotes in Figure 7-4.

Figure 7-4: Influential hub - sample open codes and quotes

Situational engagement, for instance, refers to how leaders added new members to group A based on emerging needs (e.g., adding a nurse-leader or a policy leader); how they sent members to existing clinical/managerial meetings within the regions to represent the programme; or even members’ situational contributions based on their expertise or organisational roles.

Apart from these relational properties, a number of individuals’ traits and behaviour were among properties of the influential hub. People described the chair of the group as a leader who listened to all voices, and controlled the discussions in a collaborative manner. He was a key decision maker (identifying key stakeholders), and considered himself responsible for the development and implementation of the innovation. He tried to select members who were passionate and influential to communicate the reason for change and facilitate commitment to, and success of, the programme. However, there were limitations in the degree of involvement of members. The chair was based in another city far from the Northern region. Clinical input was also limited by the amount of time clinicians (champions) could spend with the project team and in implementation meetings. There was also an objective-oriented leader among members of the group, who was referred to as an influential member within the group. People described her as a goal-oriented supporter, able to recognise
requirements and define objectives, structure meetings, and track the vision. It seemed sometimes leaders with strong management capabilities helped the process of leadership.

3. **Power and authority**

The next source of influence related to power and authority of individuals and groups that influenced others’ behaviour. High level authorities (e.g., the Minister) who were trusted actors could use their influence to encourage people to participate in such initiatives. As mentioned by a participant, they could “create a bit of an air of excitement” and communicate the importance of the change within the big picture of other change programmes in the sector.

In addition, traditionally clinicians have tended to hold more power than patients, expecting to tell patients what to do for their health care. The idea behind shared care and patient centred care was to share this power with patients and allow them to decide about their care plans and goals. This planned shift in the flow of power could affect people’s decision in response to participating in the programme.

“it’s quite a big paradigm change for you to be, from going to be the expert to working in a truly partnership kind of way” (GA)

The IT vendor also held technical expertise and, therefore, expert power to influence the direction of programme. The vendor also invited some clinicians to join their organisation, bringing their insight and relationships, and helping the vendor better interact with clinical/operational users. This could be interpreted as increasing their power in influencing users’ behaviour and adoption.

As found in the observations, the power imbalance was also evident among the different clinician groups, especially doctors and nurses. Doctors tended to have the authority and power to decide about implementation of a new programme within their working environment (e.g. a primary care practice):

“So it always would, in my experience came up against a block at some point, and that was always from medical management within the practice” (IM)

Therefore, even if a nurse was enthusiastic about driving change in their work place, they might not have enough power to make it happen. Generally, clinicians who had used the new technology were also indicated as having the social power to influence their peers in terms of adoption.

In addition, the stakeholders within group A used their power to change the direction of discussions or decisions, in line with their organisational interests and values. It was reflected in some divisions in the group, as can be seen in the quotes below:
“...there were probably competitors within the same governance group and they might have been competitors for funding or competitors for information” (GA, participant 1)

“The biggest division if you like was between the developer and the rest of the group. As the project went on and it became clear that the produce wasn’t delivering quite what we had expected that tension grew” (GA, participant 2)

The authority of the project management company also allowed them to influence the direction of the implementations. The data implied that representatives from other stakeholders, with a similar or higher level of power, were required within the managing group to make sure the overall influence was in the direction decided by all of the stakeholders.

People with power could indicate non-compliance with the changes that did not match with their interests or values. As an example, an external technical provider maintaining other ISs within the health sector did not cooperate well with the IT vendor in providing electronic data transfer among their ISs.

Another context specific power was seen in how primary and secondary care providers competed to get the ownership of the work in managing patients with chronic conditions. The groups involved were discussing why they should take control of the process, whereas the programme was trying to develop a new, shared model of work by which everyone in the team could participate in care provision and assigning tasks to others. Solving this issue of ownership or accountability in the provision of healthcare service appeared to be a controversial factor that could influence the direction of the work.

4. Informal influencers

Apart from formal leaders of the programme, there were other groups and individuals who could be seen as informal leaders. These people had a similar contribution to the progress of the programme through their social influence, or promoting and raising awareness about the change required. However, they were not known as high profile authorities or leaders of the initiative. They were simply insiders (healthcare providers without affiliations with the programme), or someone bridging between the technology and business sides of the work.

At times success, especially at the meso and micro levels, seemed to be individual-dependent. For instance, when a meso-level manager who was involved in (aware of) the programme left his role before they had established a strategy for the implementation, it caused instability and prevented provision of support at the lower levels. Furthermore, when the strategy was not there to indicate priorities, it was “up to individuals to push it if they think it’s what they want to do” (from DHB). Similarly, in the early stages of the adoption, when it was unlikely to have everyone in an organisation,
e.g., a primary care practice, on board, evolution of the work relied on these early adopters and their continuity of work in that place.

Figure 7-5 holds examples of quotes showing how open codes about informal influencers were scaled up. In summary, in the early stages, it seemed the role of adopters and individuals was important in the progress of the work. Early adopters affected their peers, indicated priorities, and promoted and raised awareness, especially if they were considered as insiders. It should be noted that in this research early adopters refers to the first groups of adopters who were risk takers, and believers in the innovation’s vision. However, they were not necessarily innovators contributing in the development of the idea by having input into the process. Innovators are also creative and energetic, putting their own time into the development of the idea (Robinson, 2009). I used this adapted version of Rogers’ (1995) definition of adopters, as both of these groups could be seen in the first stage of adoption and I wanted to stress the role of innovators in the co-construction. Hence, it can be said that there were blurred boundaries between innovators and early adopters in the first stage.

5. Strategies for big momentum

Strategies were the other source of influence. When the innovation started to build its uptake among adopters, it needed to generate a big momentum to grow from a small number of adopters to the next states (e.g., early majority as defined by Rogers). In the early stages, innovators and early adopters went through the decision making cycles (adopting, and rethinking the decision based on
the experience). When the rate of the new adopters and re-adopters does not stay ahead of the rate of quitters, then the cycle’s resultant momentum changes toward another smaller cycle of adoption (inner cycles). On the other hand, if the adopters and re-adopters create a big energy it can enable them to move rapidly beyond the inner cycles, and up the adoption curve.

One of the problems that prevented this momentum was halts and delays at the intersections where people were interacting with potential adopters and intervening in the system. Some of these delays were due to the lack of resources to approach users and time was wasted, as users forgot the earlier discussions and needed to hear information again. Sometimes, there was not enough capacity to invite new groups of users, and sometimes people were not satisfied with the level of development of the IT product. These were examples of how people lost interest and the creation of big momentum was disrupted. Therefore, it was helpful to find strategies to increase the interactions with potential users and thereby affect the rate of adoption toward the big momentum.

6. **External influence**

There were examples of external influencers that could affect progress. People in authority who could use their authority/power to support the change and fit the new programme within the bigger picture of health system were among them. The DHBs’ Annual Plans, that indicated priorities and goals (Key Performance Indicators: KPIs) to be met by healthcare settings, were other external influencers. If these plans placed emphasis on other changes that were not consistent with the programme’s goals, it could cause confusion for the care providers.

There were also national groups (such as the National Information Clinical Leadership Group: NICLG) that were groups of leaders and managers formed to provide consistency across initiatives with a similar area of interest (i.e., Information Systems in clinical use) (National Health IT Board, 2014c). Some members of the shared care programme then either attended these groups, or invited members from these groups into the programme to raise awareness about the innovation and update them about progress. In this way, the programme received feedback and found its own position within the health sector. They also found potential adopters or enthusiasts who could facilitate linking them to the new organisations.

In addition, the programme needed to add new roles in the area of healthcare provision and find new ways to fund the programme. Hence, they needed to collaborate with other organisations responsible for administration or procurement of resources. Accordingly, the decisions of those external organisations could then affect the progress of the programme.
7. Levels of influence

The data indicated levels of influence. It implied that it was necessary to have influential sources in local, regional (DHBs), and at strategic levels, for leadership transfer between layers or to connect strategic and local levels. As can be seen in the first quote below, if the meso-level (DHBs) could not transfer the influence expected, people at local levels could be ad hoc points of influence. However, the impact might not be significant because ad hoc enthusiasts needed their managers’ (powerful peers) buy-in to become a leader or innovator. In the second quote, the same interviewee explained her opinion about influence coming from strategic levels to their DHB level group:

“...so it does seem that there isn’t, so its individual clinical champions who support shared care and ongoing, although we are in organisational level supporting it, coz we have agreed to fund it.” (DHB)

“But so [name] been coming along to our project team meetings to try and support and answer some of those questions, there hadn’t really been any template kind of advice about how to go about this. So she’s there to support us in what we decide to do, and unfortunately to say because we can’t organisationally get that strategy, we’re just doing it on a peace man approach” (DHB, same person)

One of the issues in the levels of influence was that it was not enough to have levels of users/innovators participating in the innovation development, attracting peers’ attention and influencing decisions. To organise the change movement, they also needed dedicated people to bring users and innovators from other groups (e.g., IT vendor team, project management team) together and allow them to exchange their views and experience (i.e., interactions between the levels). This type of organised interaction could facilitate structuring the next actions and development of the innovation based on the local feedback. One of the interviewees was a health care practitioner contracted by the IT vendor to be responsible for this job, and provide a link between the IT team and the clinicians. It should be noted that I am not suggesting that the person who arranged these meetings and organised the work around interactions in small settings was a leader. The point is that the interactions resulted in organising the new model collectively and influencing the local users and managers to move along with the direction of change. This collective act, then, aligned with my definition and perspective about relational leadership.

In summary, this section has discussed the influence relationships that contributed to the leadership of this HIT innovation. There were levels of influence that needed to be connected at strategic, meso- and local levels to allow interactions and transfer of leadership. If the connection between levels of leadership did not work effectively, the impact was very individual-dependent. Generally, people from formal groups of leaders (strategic levels), informal influencers (at any levels), along with external influencers affected the result. In addition, the vision was another influential source that started the
movement and kept it alive; while strategies for big momentum could take the influence to another level. Power/authority also changed the direction and the balance of interactions.

**Control (Structuring behaviours)**

The second important leadership relationship (based on the number of instances) emerged was control. Control was not about telling people what to do, or how to work. It was about controlling consistency within the initiative and fitting the programme within the bigger picture of other initiatives in the health system. In fact, these relationships structured behaviours and directed them within the boundaries of the vision. Therefore, it indicated strategies and goals that facilitated achievement of the vision. Table 7-10 shows examples of open codes that formed the selective codes for control.

<table>
<thead>
<tr>
<th>Selective codes</th>
<th>Open codes (examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Meso-level leadership</td>
<td>Structures at DHB/PHO levels, power flow</td>
</tr>
<tr>
<td>2. Decision making</td>
<td>Controlling decisions, strategy for change, collaborative model, layers of decision makers</td>
</tr>
<tr>
<td>3. Political behaviours</td>
<td>Political tactics, hidden tensions, withdrawal, political referee</td>
</tr>
<tr>
<td>4. Consistency</td>
<td>Fit into the bigger picture, coordinating change across the health system, innovate knowing the big picture of change, central control, directions for consistency</td>
</tr>
<tr>
<td>5. Goals and strategies</td>
<td>Communicating priorities, re-adjust their movements (from Chapter 6)</td>
</tr>
</tbody>
</table>

1. **Meso-level leadership**

One of the concerns of the formal and informal influencers regarding control of the programme was meso-level leadership structures. There were clear high level leadership structures (such as group A) that discussed and made decisions about the vision and the strategies that could realise it. In local settings (micro-level) individuals who decided to be innovators could be leaders and inspire their peers. It was understood that the meso-level arrangements to structure a leading body between strategic and local levels was more challenging. This question was first raised in the observations about the way group A’s strategic direction was transferred to the lower levels. Then, in the previous section (influence), the importance of this link within levels of influence emerged. In this category (i.e., control), it was understood that a thread of control was needed to run through different groups/levels. The reason was that the existing strategies and plans in the DHBs were based on the national strategies and, if they were not linked to the programme’s plans and strategies, there could be confusion in understanding the priority and the position of the change.
One of the meso-level managers explained how they provided this structure in their district by defining strategies for implementation of the main concepts of the programme (integrated care and patient-centred care), and fitting relevant projects into one stream to improve consistency:

“How we came to [the name of the programme] in particular was that as part of systems integration we were looking at what kind of structure and process and both clinical and financial framework we could put around primary care and multi-disciplinary teams to orientate them towards proactive assessment care planning for at risk individuals. So to test that we had a number of pilots across the district of basically general practice led sort of multi-disciplinary interventions with individuals who had been identified as being at high risk of a poor outcome or hospital admission or whatever. And from those pilots we then kind of tried to take the best of all of them and wrap it into a programme that we could roll out, or that we are rolling out across the whole district.” (DHB)

Reflecting the programme’s vision in the district’s strategies and plans helped them to set objectives and goals to achieve the big vision. It also made it easier to deal with the unpredictable characteristic of the innovation and facilitated setting smaller-step goals. This control lever helped structure the implementations, although the future was not clear:

“So there’s much more of traditional means with which you can begin to take action even if it’s still a bit blurry about what that action might look like” (GA)

In addition, attaching the shared care programme to the existing DHB programmes/strategies allowed district managers and leaders to be known as the meso-level leaders of the programme. It provided more structure and consistency for the programme within the existing structures (joining the two leadership structures of the health sector and the programme) and also reflected accountability and governance. It was also important to provide a sense of ownership, as mentioned in the engagement stage, for the DHBs because rather than seeing the programme as being run and controlled by another organisation (i.e., the managing company), they saw themselves as being in control.

2. Decision making

Decision making was the other lever used by leaders to control the flow of events. The degree of control and how decisions were made helped reveal the model of leadership (Fairhurst & Uhl-Bien, 2012). Understanding the decision making process within this programme was one of the focuses of my enquiries, both during the observations and when interviewing decision makers. Similarly, to what was seen in levels of influence, different layers of decision making in the programme were needed for better leadership outcomes.

Power played a role in controlling the decisions by a number of leaders within group A. The power was related to having resources, or being in a socially powerful position. Traditionally there appeared to be an advantage for medical doctors in deciding about patients’ care procedures, over other
practitioners such as nurses, allied healthcare, and pharmacists. This could have affected the decisions made in the group, where there were more doctors than other care providers. In addition, those who had authority (e.g., the project manager) had power to influence the decisions and overrule some decisions (see the quote below).

“I had the feeling that there was, the decisions are made by people who hold budget or have the ability to move budget.” (GA)

The chair of group A appeared to have a critical role in facilitating decision making procedures and enabling a collaborative model. Therefore, his power to control decision making was seen as a positive factor in reaching a collaborative model of leadership.

“I mean there was one session where it was really challenging, there were lots of quite difficult decisions to be made. And we, but everyone I think felt that they were given time and opportunity to say what they thought. And he would often even get everyone to go around and have a couple of minutes to sort of say what they thought. And then we would sort of come to a consensus and if there was disagreement then people had opportunity to sort of discuss that further with the aim that ideally everyone would get to a point of being comfortable with what decision was reached.” (GA)

Similarly, in the existing structures, those authorities who had power to decide on expenditures and plans (such as CEOs of DHBs and PHOs) controlled the implementation with their decisions around the strategy toward change. On the other hand, when the DHBs did not have any strategies, or did not clearly state them, the implementation was more challenging and less driven:

“So [the DHB] with the five primary health organisations have, we have what we call an alliance agreement which says that we will work together to integrate care and improve outcomes and we will share in the gains from that. So that’s the kind of framework that we hang this off, rather than, and what that does is it says at the front end, before we start getting into all the complicated change issues, actually we’ve got this agreement of work together and share the gains.” (DHB)

As a last point, the co-design property (refer to 7.2.1.1.) of the development process contributed in the collaborative model of decision making in this programme. Although it was not clear in this study to what extent this aspect of the development process affected the decision making procedures, it indicated a potential toward collaborative decision making.

3. Political Behaviours

The observations and interviews had indicated incidents of political behaviour within the programme. There were examples of political tactics, hidden tensions, withdrawals, and other behaviour that could be interpreted as political. For instance, the DHBs knew that the IT companies, which provided Patient Management Systems, might not cooperate fully with the changes in competing for their market.
share. The response (political tactic) to those behaviours was to try and plan for a long term negotiation with those powers:

“But the only way through it really is to try and make those dynamics as explicit as possible so that we can actually see what we’re dealing with, and then step by step try and both change the structures and the incentives, and the way that resources flow to match what we want. But again it’s another reason why we plan these things over years rather than months.” (DHB)

Some of the behaviours were specific to the complexity of the Auckland region and the many competing forces at play. A participant from outside this region described it as “local nuances and personalities at play”. There were hidden tensions that were not able to be understood by someone outside the context of that region. This underlying tension was felt when two groups of powerful stakeholders came together around the decision making table and each wanted to be the leader. In addition, they tried to be cautious about the information they revealed from their side (their organisation) when meeting with other stakeholders within the programme:

“Because some of the information that may have been raised or shared might have had some sort of funding implications or it might partly have been information that might not have been shared more widely outside of a particular DHB or a PHO and it became possible that it might have been aired a little bit wider at a governance group or was tested.” (GA)

Another example of political behaviour was seen when the formal leaders were asked to judge something outside their professional experience or knowledge, in order to “play off” against a group and make them follow the direction of the others. The role then was as political referee in overcoming a powerful member via collaborative decision making (i.e., to vote for the less powerful member in decision making procedures).

People in strategic positions in a health system might not support an initiative if they saw it as a risk for their career. It was said that some of them waited for the outcome to be proven, a political behaviour, which was a risk for the success of the innovation. Another participant mentioned that some would withdraw from the initiative as “the going gets tough” to avoid the problems. However, withdrawal from an innovation development was seen as a wise decision when the trials indicated that the innovation might not be successful. Hence, the political behaviours and decisions varied, depending on the situations, to benefit an individual, a group or even the whole health system (i.e., to not risk their job and resources).

Selecting people as leading members was also a political tactic to attract those who had more influence in their organisations (in different group of stakeholders) and were interested in the main concepts of the innovation:
“I think there was some fairly conscious choices about who was chosen and from where in terms of maximising the likelihood of success”. (GA)

Organisations who could assure their nominated person was selected for these roles increased their power to control the direction of the initiatives.

4. **Consistency**

In this study, control refers to the provision of consistency within the initiative and fitting the programme into the bigger picture of other initiatives. The points mentioned and the number of instances of data marked it as an important property of control in the innovation. Fitting the programme into the big picture required consistency across relevant initiatives within the health system. The other dimension of consistency was within the initiative. I discuss examples of each dimension respectively.

As there were various boards and sub-sections working under the Ministry of Health, that were promoting their own focused messages, the data indicated the need for a joint message outlining how all these entities could come together and contribute in the provision of the NZ Health Strategy. This could control deviations from the goals and facilitate collaborations. It could articulate what changes were required and how all these entities could work together to realise each aspect of it (fit into the big picture). Therefore, this central control needed to come from the outside of the programme and from high level authorities within the health system.

Central control was also required around reviewing resources and coordinating them across the health system. There was a bigger overarching programme that included relevant programmes (such as the shared care programme) across the sector. It raised awareness about what was happening and allowed those involved with these initiatives to innovate armed with knowledge of the big picture of the desired change:

“...and this is why I’ve now got in touch with the e-referrals Project Manager, ... , because they were starting to explore how they could expand that communication part of e-referrals. They’re like, well actually you don’t need to, this tool here Shared Care has that. So again it’s about, that’s why you need to look at these as a whole otherwise you end up trying to use one tool and use it for everything.” (DHB)

In order to be consistent with the existing plans and strategies, DHBs also needed to make sure the programme was consistent with their own regional/district annual plans. They developed their annual plan and collaborated in the development of regional plans and strategies (e.g., Northern regions’ Regional Information Strategy 10-20), according to their region’s needs (Northern Region DHBs, 2009). The goals of the programme needed be consistent with the goals and KPIs in the annual plans.
“...there’s some KPI’s in our annual plans around the Shared Summary Record. ... they’re driving us generally towards having a shared summary record available to 50% of, from 50% or GPs to EDs... it would make sense that we all use that [the care planning goal in our programme] for..., for the shared summary record” (DHB)

The formal leaders of the programme also found common issues with other relevant initiatives and tried to communicate with representatives of those initiatives to find common solutions. Examples included issues around patients’ rights, confidentiality, and medico-legal issues.

Turning from provision of consistency across the health system, I found another aspect of consistency within the initiative. There needed to be an orchestrating body that communicated with each organisation/group/specialty that had adopted the innovation to coordinate change and lead the consistency. It was reasonable to expect the managing company to provide that role. There was insufficient data to indicate whether this consistency was provided and by whom (as it fell outside the research question). It appeared to be challenging because the DHBs were supposed to have autonomy in choosing their implementation approach. In contrast, they expected to receive practical guidelines for the implementation:

“It’s very much a, here are the broad principles, what you do under that is your own business. Some of us have argued that they need to be a little bit more directed (laugh).” (GA)

5. Goals and strategies

The next concepts that contributed to controlling relationships were goals and strategies. Strategies, especially in the meso-level, had an important leadership role. In the evolving and unpredictable condition of the innovation development, however, people found it hard to understand what might emerge and how they should achieve the vision.

A participant referred to the importance of having simple goals and measures. Otherwise, “How would we know whether we’re getting better at doing it?” It seemed people (including formal and informal leaders) required the complexity of the concept to be simplified and goals defined that were transferable to others without confusion:

“What’s happened is that this is emerging and bubbling away. I think personally that they don’t get it. Therefore they don’t quite know what to do with it.” (GA)

The data indicated that when leaders had the authority to communicate the priority of the shared care concept in their district, there was a positive effect in having a clear strategy. For instance, when leaders decided about the funding of the programme, or indicated how “to restructure the existing funding to support that”, they were actually communicating the priority of the programme. In that case, when people changed their roles within the organisations, the change programme did not fade
away. In addition, if the DHB’s strategy communicated the priority of the new way of work, clinicians could then allow themselves to not carry out some other work in order to perform the new job.

People also expressed that having a “big goal” without a strategy would cause confusions and deviations. The focus of discussions between leaders and decision makers might then deviate toward tangible but unimportant issues.

In summary, clear goals and strategies for change, provision of consistency within the initiative and across the health sector, people who had power to impact the decision making patterns, and also political behaviour of the programme members all contributed to control and structuring of the behaviours in this initiative. The meaning of control in this study needed to be compared with that for other existing leadership of change theories. It can be seen that most of the existing literature that explicitly talks about control in leadership in organisations is indicating a managerial perspective of control (e.g., (Bechtel, 1993; Eatough, Way, & Chang, 2012; Flannery & May, 1994; Goodman, 2014; House & Howell, 1992; Musteen, Liang, & Barker, 2011; Pavlovska & Kuzmina-Merlino, 2013).

The managerial control, which is from the employees’ perspective, can be best described by Perceived Behavioural Control (PBT) theory (Ajzen, 1991). In this theory, control means how easy/difficult is to perform an act (Ajzen, 1991). Employees’ perceptions of autonomy and freedom of work (opportunity to act based on their own knowledge and diagnosis) is associated with managers’ control (Bechtel, 1993). Similarly if we look at control from managers/leaders’ viewpoint, and describe it as the ability to control the system in hand and change the outcome (described by Rotter (1954) as locus of control), it is another example of managerial control (Dumitriu, Timofti, Nechita, & Dumitriu, 2014; Pavlovska & Kuzmina-Merlino, 2013; Trivellas & Drimoussis, 2013). This control also includes telling people what to do, monitoring them, evaluating the status of change, and using rewards/punishments, to change their behaviour (House & Howell, 1992; Pavlovska & Kuzmina-Merlino, 2013). This use of control is also seen in the traditional view of leadership where leaders are expected to predict the future and apply control mechanisms to direct change, and reduce complexity and uncertainty of change (as explained by Plowman et al. (2007) and Stacey (1992)).

Another perspective of control, closer to the definition of control used in this study, is less common (Bazzoli, Harmata, & Chan, 1998; Horwitz & Currie, 2007; Larson & Park, 2014). In these studies, the style of control is applicable in that innovation cannot be directed, but can be bounded (Stacey, 1992). This control can also be seen in complex systems where loose control allows people with similar interests to participate in generating innovative ideas (Stacey, 1992). This perspective is seen in governmental studies e.g., in “governmental leadership” that provide a long-term vision and plan
The control is applied through general policies/strategies and guidelines in order to coordinate movements, while allowing independent decisions and acts (Horwitz & Currie, 2007; Larson & Park, 2014).

The meaning of control in the thesis is similar to the version seen in the latter group of studies, which can be called governmental or leadership control. It is also congruent with my relational stance in studying leadership, as this view of control believes in emergence of outcome and ongoing change. Therefore, control here is not about telling people how to implement change, as the unpredictability of innovation does not allow knowing what the future will look like. It is only possible to draw boundaries around the initiative, fit it within the big picture and provide strategies and policies for consideration.

The study indicated that the aspect of control that relates to decision making patterns, should be less in the form of managerial control (i.e., powerful authorities should allow collaborative models of decision making to happen). According to the literature, managerial control is about using power to influence decisions, control people’s behaviour and control the outcome (House & Howell, 1992; Musteen et al., 2011). To the contrary, my findings did not support this type of control as a leadership relationship.

**Value creation**

The next leadership relationship that emerged was about value creation. Relationships that focused on creating the vision, communicating the reason and urgency for change, attracting/creating motivation for the work and improving perceptions of usefulness (of the vision) were categorised as value creating relationships. Table 7-11 represents examples of open codes that resulted in this subcategory.

<table>
<thead>
<tr>
<th>Selective codes</th>
<th>Open codes (examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Work motivations</td>
<td>Value in pervasiveness, financial rewards, work excellence, internalisation of values (raised in Chapter 6)</td>
</tr>
<tr>
<td>2. Communicating the reason - urgency for change</td>
<td>General awareness, communicating priorities</td>
</tr>
<tr>
<td>3. Creating the vision</td>
<td>Goal internalisation, the patient-centric demand</td>
</tr>
<tr>
<td>4. Perceptions of usefulness (of the vision)</td>
<td>Usefulness of the idea, interest creation, seeing outcomes</td>
</tr>
</tbody>
</table>

1. **Work motivations**

As raised in Chapter 6, and mentioned in the engagement and adoption stages as well, work motivations appeared to be important in creating value for some users. For instance, in the
programme, clinicians mentioned instances of value they saw in the pervasiveness of the new model of work:

“But the problem with specialist leadership is you’ve gotta have something that’s widely available... So yeah sure there’s no value to the specialist there in using it, but they can’t use it, and hence then there’s no value to the patients,” (GA)

If doctors were supposed to use various IT tools to communicate and transfer data between different healthcare organisations, they might abandon the model if it did not build critical mass. They wanted to see widespread use of the innovation and its IT tool across the health system. Clinicians also expected the new model of work (including using the new IT system) to be a relatively wide part of their daily job (i.e., seeing many patients in the new shared model). Repetition in using a new technology was considered crucial to learning it faster and better. For instance, one of the tactics used to make this happen in primary care settings was to have a dedicated person (e.g., a care coordinator nurse), who rotated between practices and performed this job, instead of relying on one nurse in a practice who would do it for one-hour every two weeks.

The nature of work in this innovation relied on having a network of users across the sector. If a healthcare professional thought, “It’s going to be widely used”, as mentioned by one nurse, it would add value for them to be part of the innovation. Hence, the “network effect”, as it is defined in the adoption literature (Katz & Kahn, 1978), was a parameter that added more value to the users when they saw there were more people using the tool and the new model of work. However, it took time to build this widespread use of the innovation, especially among secondary care providers who might see a patient only infrequently:

“So if there are only a few GP’s involved in a programme then specialists in their clinics, or in the hospital setting, or in the wards, etc, aren’t exposed to this, you know to this programme very frequently. So from the point of view of day to day use of the programme from a specialist end it was relatively limited” (GA)

One of the tactics used to offer widespread use was widening the group of enrolled patients in this service. It was another path to creating critical mass for doctors and motivating them to use this innovation. Finding a feature that was beneficial for a wider group of patients and then allocating care planning features to a smaller subsection could have created more interactions for clinicians:

“Because then everyone gets to know that it’s worth going in there, you might find allergies, or alerts, or something that’s useful for that patient. And in the more complex patients you’re likely to find a care plan....Whereas at the moment from an ED perspective, or a hospital clinic perspective the chance that someone has a shared care record, or a care plan, is so low that it’s not worth looking coz it does take time” (GA)
The next concept that came up as part of work motivations was financial rewards. People who were working passionately to develop the idea in the new model of care needed to be reimbursed for their time and effort. Clinicians might be motivated by the intended outcome, i.e. better quality of care for their patients. However, they still had to cover expenses, such as hiring someone to do coordination and administrative work for the change. They, themselves, might continue working without payment for a while; however, motivation could be diluted when work became frustrating. On the other hand, some people might not even start considering extra work or a new technology unless they knew it was going to be funded. One of the participants claimed that financial rewards and dedicated funding streams for the innovation would contribute in sustainability of the work within the health system:

“I think it will enable the sustainability from a few people who are currently championing it through to wider uptake.” (S)

Another motivating factor was work excellence. When nurses felt that working with the programme was a way to uplift their roles within the traditional hierarchical of health professions; or when they expressed their feeling of working in a DHB that was “innovative” and “promoted nurses really well”, it struck me that people got motivated when they perceived excellence in their work. This is how one of the clinical specialists described the programme and its impact on nurses’ role:

“If you’re discussing it with primary care nurses, then the fact that they are able to have the information recorded from their perspective and then it’s permanently available in both their records and in the records in the hospital and either records if the pharmacist wants to look into it. I think they will see that it’s perhaps more innovative because traditionally the clinical record has been a doctors record.” (S)

In summary, pervasiveness, financial rewards, and work excellence emerged as important concepts that contributed to work motivation and thereafter created value for the health care professionals within the programme.

2. Communicating the reason - urgency for change

Once people accepted that there was a real need for change and realised that it was also an urgent need, it affected their decisions and added value for them to be part of the initiative. Participants discussed their views of why the healthcare delivery model needed to change and why they had to communicate this change to wider society (see the quote below).

“We are still stuck with the concept that the only way for a clinician to interact with a patient is face to face, one on one. And the one person must generally be in charge of care at any one time. So there are a lot of societal and strategic reasons why that model cannot continue in the future,...” (GA)
Then the participant continued on to explain the reason for change and how the healthcare delivery system was unsustainable and needed the intervention for change:

“The key thing is that we cannot keep doing what we’re doing because we’re going to run out of health professionals, we’ve got an aging population, we’ve got greater incidents of long term conditions, co-morbidities, all those things. And the system will simply snap unless we find a way to change the way in which services are delivered”

I associated this concept with leadership as it drove the new way of thinking and inspired people to participate in change. People had to communicate the risks of continuing the current way, and how the new initiatives could contribute in the change by raising general awareness. The programme itself raised general awareness when it was tested in the field. Newsletters and forums, and all the interactions happening as a result of the implementation, sensitised people to the main concepts of the innovation.

This communication also had to indicate the urgency and priority of this change as one among other change programmes. Otherwise, people might get busy with other programmes and not use (stop using) the programme, even if already been adopted by them, because of not seeing any priority in using the innovation. This communication should also imply that people were supposed to prioritise this more important work instead of taking it on as extra work on top of their current job. It was noted that people tended to respond to urgent issues rather than important ones. Hence, the urgency/priority of the change needed to be communicated to get better adoption and use.

Communicating the reason for change, its priority and raising awareness about the new way of work needed to be supported by educational systems as well. When health practitioners learned about the model of healthcare delivery, they should be made aware of the new models to allow their thinking to shift from the traditional provider-centred model of work to the patient-centric principles. Otherwise, their expectations and mind-set could affect their practice; for example, in thinking of care plans as wholly determined by medical doctors, including the use of medical terms, and medications and treatments prescribed for the patient, rather than being determined by what the patient imagines as a goal (e.g., being at my daughter’s wedding) and their preferred actions to help in reaching the goal.

3. Creating Vision

Creating vision for change was the first step to adding value for people and influencing them to get involved with the initiative. However, as found in Chapter 6, it was not enough to simply communicate a vision to add value. To get to the point of value creation, people needed to internalise the vision and consider it as a transcendent goal in their hierarchy of needs. If the first thing coming into their mind
was to “have patients involved in their own care”, or to consider all the diseases and plans that the patient had, they were closer to internalisation of the patient-centred care. Similarly, an interviewee implied her perceived value in the vision of the programme, as being able to make a difference in the quality of care:

“And if you haven’t got a good relationship [with patients] you’re not going to make a difference.” (N)

When the healthcare practitioners began relating to the value the vision could generate, they started the journey by exploring how they could realise it (the new model). On the other hand, when they focused on the features that were of value to them (as a user), and did not consider the value that it could add for patients’ experience, they were operating at the level of comparing the technology features between the existing ISs and the new IT tool.

Patients also needed to understand the vision and indicate their demand, if it added value for them. There was a perception among clinicians that they should present the opportunities that the new healthcare service could bring to the patients; otherwise, there was not enough demand to drive that change.

Finally, as found in the previous chapters, the vision was not created from a top down approach, but through a middle-out model (Bowden & Coiera, 2013). A meso-level clinical manager explained how he and his group got involved with the idea of the programme, and contributed in its evolvement:

“So there was a lot of feedback on this plan at a stage well before it was appeared (sic) in printed form, and I’ve got a slide of from when it was presented to the one of the first meetings of the [name of a leadership group], probably even before I was chairman.” (S)

4. Usefulness perceptions (of the vision)

The last concept explaining the value creation activities in this initiative was usefulness perceptions of the vision. The study indicated that perceptions of people regarding a vision can be as important as the vision itself, and its power for influence. The way they created the vision and the degree of collaboration among stakeholders in this process impacted members’ perceptions about the vision. Therefore, not only did they need to create a vision that added value to the users but also they needed to understand users’ perceptions of the usefulness of the idea and how they saw the outcome.

In addition, policy makers’ perceptions of usefulness of the idea had a higher impact in the future of the programme. Group A invited key policy makers to their meetings to allow a closer understanding of each other’s perceptions and visions to enable learning about how they could collaborate.
Seeing the outcome could also impact the perceptions of usefulness. One of the issues raised in the programme was identifying how the health care outcomes improved and what needed to be tracked to recognise the benefits.

The test phase of the programme was a way of presenting the usefulness of the idea and identifying appropriate indicators of improvements in the outcomes (of care services). People talked about different indicators and it could be interpreted that there was no consensus on them (see Figure 7-6 from different participants in GA). It can be seen that they had different expected outcomes: health system’s effectiveness, improved information sharing, and patients’ self-management.

Users could also influence their peers’ perceptions of usefulness. The programme attempted to organise forums in one of the DHBs for clinicians from primary health organisations to hear the stories of current users and learn about the administrative and leadership structures.

Perceptions of usefulness of an innovation are not always based on what was originally intended. Users might find other uses for it which can drive their adoption in a way that was not planned. This was another reason for the programme members to pursue users’ feedback and understand their perceptions. They also mentioned that outcomes and benefits should be tracked during the implementation to find the deviations and then be able to review the plan to incorporate a new way of work based on the perceptions and the outcomes.

In summary, in this section relationships that contributed in value creation have been discussed. Leadership relationships were found in collaboration of stakeholders to create a vision, so that the
goals could be internalised by potential users. Then the reason for change and its priority needed to be communicated in both institutional and meso-level strategies and plans. The other relationships that emerged were about understanding work motivations among groups of users. These motivations could be financial rewards and other context-based motivations. In this case, one of the work motivations was to define clinical use in such a way that it could become a wider part of clinician’s job and enable widespread use among their network (to support value of pervasiveness). The last relationships were mechanisms for feedback and measurements to review strategies and plans based on people’s perceptions of the vision and its usefulness.

**Supporting change**

The way in which people supported change emerged as the next highlighted relationship contributing in the leadership of this initiative. The first example showed different layers of users and innovators who were bound to the upper levels of the programme and how the programme supported their involvement. The decision makers’ consensus on the change and the way it should be led added to the support required. In addition, people began to realise that they should put the change first rather than think about the tools they were going to use, because the tool was a facilitator not an agent for change. Users also might need to take risks in their jobs when they participate in an innovation development. In the following section, these four selective codes are elaborated in detail. Table 7-12 highlights samples of open codes that formed the selective codes of the subcategory supporting change. Some open codes, such as putting change first, were more analytical and I moved them up to this level.

<table>
<thead>
<tr>
<th>Table 7-12: Supporting change subcategory, sample open codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selective codes</strong></td>
</tr>
<tr>
<td>1. Indicating support and binding</td>
</tr>
<tr>
<td>2. Decision makers’ consensus on the change</td>
</tr>
<tr>
<td>3. Putting the change first</td>
</tr>
<tr>
<td>4. Risk taking</td>
</tr>
</tbody>
</table>

**1. Indicating support and binding**

When the decision makers decided about the adoption of the innovation, they needed to give time to the development process. This was a form of support for the change to emerge. They could invest in it by allocating resources (defining roles and funding them) to indicate their belief in the vision and the need for change. The investors should also consider the emergence and unpredictability of the
innovation as reasons for not closing down the process if it was evolving in directions they did not expect:

“They need to be careful not to shut that down because it’s not going where they thought it was going to go.” (PHO)

A practice nurse described how a GP, responsible for the uptake of the programme in their practice, was trying to put time and effort into doing extra work for a while, although implying that he was not sure where it might end. This act inspired the nurse to follow the new service model as she was very passionate about it. It could be seen that the GP was a binding point for the nurse to not feel left alone and to keep going with their new way of work, until they both decided on continuing in this way:

“As far as other programmes then [the GP] and I would have decided that we were going to go with it, he would have talked with his other colleagues and they would have made a decision yah or nay, one way or the other to go with the programme.” (N)

One of the tactics used in the programme was to find people from the existing binding structures to support this change. By binding structures, I mean structures such as DHBs, PHOs, and General Practice units (a clinic where a group of primary care doctors work together) that health professionals were bound to in their practices. Therefore, people would consider the new way of work as something attached to the current structure, not a one-off experiment that might not later become part of the structure. This would create sustainability for the programme within the health system.

There were other incidents of data showing support for the change, including consultation that happened outside the formal meetings, national promotions about the change, and high level executive and mass media broadcasts that attracted public attention to the change required. It was also found in Chapter 6 that there needed to be a supporting role, such as coordinator, to glue actions around the change together. The role was for someone to coordinate new tasks across the users/adopters and to arrange the new way of work, instead of leaving it to the users of the new product to find out and learn about the new model on their own.

Eventually, the aim of support was to help people not to think they were “isolated”, and to show them they could reach someone for guidance in dealing with their problems. People implied having connections or binding with the programme team, which could indicate to them there was still a demand for what they were doing:

“There’s been no push to continue, it’s something that we would like to instigate and have some further support around but I’m not sure who the key people are who are, who are running the project now” (N)
2. Decision makers’ consensus

The next concept that I categorised as supporting change was decision makers’ consensus. When group A came together to participate in management, leadership and governance of the change, they went through a process of reaching a consensus before they started performing. Stakeholders with different concerns defended their group’s position in this change and tried to convince others to support them. Finally, they reached a state where they could start implementing the change, as explained by a participant: “And so I think quite a lot of those early meetings was that forming, storming, norming.” The stages mentioned by the interviewee were proposed by Tuckman (1965) for small group development stages. It explains how groups start from forming (i.e., establishing relationships and rules), and move to storming (conflicts and interpersonal issues), norming (reaching cohesion and establishing norms), and finally performing (a supportive and problem-solving group) (Bonebright, 2010). The decision makers’ consensus, then, can be seen as the time the group moved into the performing stage. Gaining agreement among the executives was not the only support needed though; what they did proactively in their area of influence preceding the change could transfer that support to the lower levels (indicate binding).

To get a better support for change in meso-level, one of the DHBs tried to have more “bottom-up involvement” by consulting their PHOs and practices, and following a collaborative approach in reaching a consensus and an agreed conclusion. It appeared that their clear decision making procedure and collective agreement on driving the change contributed to better progress in their region.

3. Putting the change first

Innovators who put the change first and developed skills toward it, rather than discussing the IT tool features and functionalities, were seen as more structured groups with faster outcomes. I considered this action as another support relationship.

“…they had reached a point of wanting to change their CCM programme, so Chronic Care Management programme, which does provide additional funding to primary care to spend time creating care plans and supporting patients to help keep them well” (GA)

It then affected their implementation strategy as they did not consider the programme as an IT project, but rather as a change management project. The focus on change would lead actions toward the discovery of the main concepts (patient-centred care and integrated care), that would eventually develop the innovation. Knowing that the programme had three types of innovation, the process, product and service innovation, the aim was not to use the product to change the work. It was the process that was changing innovatively in using the product (as a facilitator) to develop the new
service. The following quote explains what happened in one of the DHBs that was referred to as a more successful region. The interviewee associated the success to the fact that they had dealt with the new model of care first, and then adopted the IT tool:

“They were doing this kind of model of care before, so they had their structure in place to do that. And so when this particular tool came along, the software came along, they were able to adopt that in their practice structure reasonably easily and continue. So what they had already done, they’d already changed their actual model of care with the people, in what people did in the practice.” (GA)

4. Risk taking

Finally, risk taking was another support relationship in this initiative. It was understood that people interpreted the degree of change, radical or continuous improvements, differently. Knowing that the original intention was to bring a radical change, it was an indication that the interactions of people involved with the innovation development would impact the resulting change. Therefore, it was not easy from the beginning, and even mid-way to argue whether it was leading to a radical change or improvements. The owners of the change programme associated this ambiguity and unpredictability with risk taking:

“So the vast majority of the work the National Health IT Board does is, is known investments or maybe slight process improvement investments. That’s you know, probably 70% of our portfolio is in that space, and then we just manage less than 30% in the innovation space.” (GA)

The above-mentioned quote, by a high level executive responsible for leadership of group A, implies that there was a limited capacity for innovative projects that might be risky in terms of unpredictability of innovations. He followed it by saying that it should be seen as a learning process that was required for improvements in health systems regardless of the results, and executives needed to take responsibility for the risks.

The problem was that leaders who took responsibility for the risks and tried to drive the change were not able to predict the outcome either. This seemed to be in contrast with the need for defining goals and healthcare outcomes. In the section on value creation, I discussed how important it was to define the outcomes to enable users to follow them during developments and to positively affect their usefulness perceptions of the vision. In addition, I concluded that as the innovation might evolve away from what had originally been defined, they needed to pursue changes and review benefits and outcomes. Therefore, they had to take risks to go through this process of defining, feedback, and refining the outcomes, and they then needed to accept the changes to what they had promised that might appear: “Or do I feel that actually it’s worth standing up for this because it’s not what I thought but it’s not a bad thing”. To sum up, the leadership relationships that were supporting change included
indicating support and binding, reaching consensus among decision makers, putting change first, and taking risks.

To summarise the leadership subcategory, I discussed four relationships that collectively intervened in the current social behaviours and changed them to solve a problem. The influential sources started the conversation, inspired people, drove the innovation through challenges and transferred leadership to the other levels of influence. Decision making procedures, goals and strategies, and levels of leadership provided boundaries for the movement and enabled consistency. This relationship was defined as control or structuring behaviours. The next important leadership relationships were around creating value. They included creating a vision, understanding work motivations, communicating the reason/urgency for change and being aware of the usefulness perceptions. The other relationship needed was supporting change. People needed to see they were binding to the other levels of the initiative, decision makers needed to reach a level of consensus about the change, the executives had to put the change rather than the tool first, and take risks to enable the innovation.

Influence has often been associated with power (Bolden, 2011). For instance, power can influence economic dominance or dictate standards (Hertzfeld, 2007). In an individualistic view of leadership, a leader (superior) uses power bases to change subordinates’ attitudes or behaviour to achieve certain goals (Krause, 2004). For instance, using expert knowledge and information is a source of influence (Krause, 2004; Raven, Schwarzwald, & Koslowsky, 1998). Using expert power as a source of influence was seen in my study.

Leaders’ individual traits and behaviour to influence followers has been vastly investigated (Fairhurst & Uhl-Bien, 2012). These studies describe influencing members’ behaviour using exchange relations (Harris, Li, & Kirkman, 2014), charismatic influence (Avolio, Waldman, & Yammarino, 1991; B. M. Bass, 1999; Stone et al., 2003), articulating vision, expressing confidence, leading by example and empowering followers (i.e., transformational leadership e.g. (Chapman, 2002; Stone et al., 2003; Yukl, 2002)). Similarly, servant leadership also seeks influence through being a servant to followers and trusting in them (Stone et al., 2003).

Interestingly, Krause (2004) indicates that individuals’ identification (inherent in transformational leadership studies) is not as significant as a source of influential leadership as expected in the innovation development context. She argues that delegating autonomy to other managers and a participatory style of leadership is more influential in the presence of innovations. This finding implies a role for collective leadership, and the benefit of less managerial control (e.g., in House and Howell (1992)), in innovation processes. Generally, the existing literature mostly focuses on individuals’
influence. However, the research undertaken for this thesis emphasised that apart from individual influencers, the vision, strategies and external organisations can be sources of influence that generate influential relationships among actors in an innovation development experience. It should be mentioned that I do not claim that the impact of external organisations or strategies has not been found in organisational change studies. For instance, in discussing Complex Adaptive System theory, Bradbury and Lichtenstein (2000) indicate that interactions between organisations that are industry partners can alter both of the partners. Therefore, it can be said that the thesis findings highlighted the role of these non-individualistic sources of influence as part of leadership structures.

There are many examples of control in the leadership literature that can be labelled as managerial control. These studies refer to individuals’ perceptions of autonomy and freedom of work (Bechtel, 1993), their ability to control a system (Rotter, 1954), instructing people about their job, monitoring them, evaluating the progress, and using rewards and punishments, to change subordinates’ behaviour (House & Howell, 1992; Pavlovsk & Kuzmina-Merlino, 2013).

However, innovation can be bounded rather than directed by leaders (Stacey, 1992). The meaning of control in my thesis was closer to the studies in which control is applied through a long-term vision and strategy (Larson & Park, 2014), coordination of movements, and by allowing independent decision making processes (Horwitz & Currie, 2007; Larson & Park, 2014). I referred to this type of control as leadership control in the context of the innovation.

Creating a vision and communicating it has always been emphasised in the leadership literature (Bamford & Daniel, 2005; Jain, 2014; Kotter, 1995; Kramer & Crespy, 2011; Nanus, 1992). Using motivations such as financial incentives is also a recognised way to create value (Paulus, Davis, & Steele, 2008). Moreover, analysing users’ perceptions of usefulness is seen as an important action of transformational leaders to impact adoption of innovations (Birasnav, Rangnekar, & Dalpatti, 2011). However, it is not recognised and not emphasised in the literature as a way of creating value. Therefore, the findings of the thesis highlighted the need to consider users’ perceptions to create value.

In a group of studies on organisational change, the meaning of leadership support is variously, leaders’ style (e.g., supportive leader, charismatic leadership) (House & Howell, 1992; Plowman et al., 2007), training staff about the innovation or change (Bhandari et al., 2011; Chang & Johnson, 2010; Spetz & Keane, 2009), and financial support (i.e., resource allocation) (Brailer, 2009; Chang & Johnson, 2010).

In this study, the results did not reject these types of support for individuals, but highlighted the processes and activities that could support the change desired. The purpose of support was to enable
change to happen. It included indicating to local users that they were bound to the other levels of the initiative, giving time, linking the initiative to the existing binding structures, and coordinating change across multiple organisations. Moreover, the decision makers’ consensus about change, their risk taking, and putting change first and before the new tools, were other elements of support. There are other literatures that indicate similar meaning of support in leadership of HIT initiatives (Ingebrigtsen et al., 2014; Jain, 2014; Paulus et al., 2008). They describe support as giving the change clear priority, spending time with groups involved (Ingebrigtsen et al., 2014), the involvement of clinical champions with the initiative, tolerating failure (Krause, 2004; Paulus et al., 2008), not being afraid of risks, and promoting collaboration and team working (Jain, 2014). Hence, it can be said that the meaning of support emerged in this study is in line with a group of studies that see support more in change facilitation, than supporting and training individuals.

Moving from the leadership category, I describe findings in the governance category in the following section. The connections between this category and the previous categories will be investigated in Chapter 8.

7.2.3. Governance

Exploring what people were doing in group A, also known as the governance group, indicated that there were activities and relationships relevant to governance, as well as overlaps between leadership and governance relationships. Therefore, I investigated properties of this group that can be categorised as governance relationships.

Smith, et al., (2012) discuss new trends in governance literature and describe it as social coordination and a concept close to leadership. They define the traditional hierarchical form of governance as “a need to define rules, allocate resources and responsibilities, with an implication of top-down direct control” (P. C. Smith et al., 2012, p. 38). I used the traditional definition as a reference to be sensitive about what could be distinguished in group A’s relationships and behaviour as governance properties. Four properties emerged in the end and I describe them in this section (Table 7-13): deciding about resources, overseeing tasks, reflecting leadership and structures at different levels.

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>Deciding about resources</td>
</tr>
<tr>
<td></td>
<td>Overseeing tasks</td>
</tr>
<tr>
<td></td>
<td>Structures at different levels</td>
</tr>
<tr>
<td></td>
<td>Reflecting leadership</td>
</tr>
</tbody>
</table>

Table 7-13: Governance category - conceptualisation
The first subcategory of governance was deciding about resources. Funding, time and workforce were the three resources required for the development and the implementation of the programme. Primary care settings were working as private organisations and their business concerns would affect their decisions. PHOs working with DHBs through contracts to provide primary care services considered their ability to pay primary care settings for the new services, and their capacities (workforce) to conduct it. In addition, the IT vendor needed enough resources to develop the tool as the programme evolved. The programme teams also needed to have the capacity to approach potential adopters to engage and support them during development.

The NHITB and the DHBs involved also needed to decide how much, and for how long, they could fund the programme. There were concerns based on projects that had not been funded sufficiently and not given enough time to develop the innovation. It seemed to be a critical responsibility for the governance structure to decide about resources and then to obtain them.

“For funding to fail, funding to fail. You know, you can fund something to fail by giving it about 90% of the minimum amount of funding it needs in order to do its job. And that way it simply won’t work because it can’t get across the line.” (GA)

When people did not perceive the decisions on the resources as realistic, some lost their motivation for the innovation and considered it risky for their role, and so withdrew from it. High level executives needed to look at the resources in their bigger picture, to be able to ensure adding new projects, even for a short term test, would not overstretch the resources. A participant also referred to the New Zealand context and how such decisions were made regarding Health-IT initiatives:

“But because these sorts of projects are so complex in New Zealand we often don’t fund them at the level that probably is required to do it well. That said I’m sure you could throw lots of money at something like this and still be in a similar place potentially.” (GA)

In this programme, the vendor was funded through the DHBs to provide the IT tool required for the healthcare organisations involved. The other funding stream required was for healthcare professionals, and those who were involved in the implementation work. As mentioned before, the participants’ view indicated that resource allocation, and specifically funding, could be associated with ownership of the project (quote below). Where there was no clear funding stream, people tended to associate programme ownership with the managing company rather than DHB/PHOs.

“...some of the projects are resourced with Project Managers, such as dementia, and some of them are relying on clinicians fitting into their existing work load..., but we don’t have any resources to implement it. So it’s not a project because nobody has ownership of it really,” (DHB)
**Overseeing tasks**

A series of actions and relationships of group A were around overseeing tasks, i.e., the second subcategory of governance. In this high level of leadership and governance, people needed to indicate accountabilities, delegate authorities, define high level strategies and objectives (to implement the strategies), and provide professional advice. There were some incidents of more definite control actions such as defining the scope, goals and measures, and forming a structure at different levels. Figure 7-7 provides examples of open codes and quotes that were relevant to overseeing tasks, as a selective code.

![Diagram of Overseeing tasks]

"It was also felt that it was important for the DHB’s to take ownership of [the programme]. And while there was a national steering group and it was all run by [managing company], there wasn’t that sense of ownership." (GA, participant 1)

"we’d all agree on something … but the more important thing was then how were we going to actually make that happen or what strategies were we going to use … to kind of bring that into focus" (GA, participant 2)

"…there was a lot of debate about what disease should we start with, you know should it be someone with heart problems or someone with diabetes or whatever" (DHB, same participant)

"…because they have enormous expertise in their field and they have huge advice to offer and guidance, and so you really did need to honestly listen and be guided by it and be prepared to adjust things" (DHB)

It was particularly important to have clear accountability in the meso-levels, where people needed to see their binding with the programme and receive regional plans and strategies/priorities. It could help push people toward change and motivate them to continue their efforts. Sometimes ambiguity in accountability caused people to refer their problems to higher levels, where there was not enough insight about the operational levels. Delegating authorities also needed to be able to provide advice and insight about the main concepts of the innovation and the strategy to implement it. Otherwise the ambiguity and the complexity of the innovation development process could become a barrier to the new authorities’ work.
The governance group was a place for making strategic decisions and defining strategies to show how the vision should be realised. They also needed to indicate how the results of the test phase should be transferred into the next levels of implementation.

**Structures at different levels**

As another subcategory of governance, the interviewees indicated that governance should have structures at different levels of the programme. Similarly, to what emerged as meso-level management (in the implementation stage), and meso-level leadership (to control the direction and allow power flow), meso-level governance was also needed to complement the levels of governance structures in the programme.

Meso-level governance needed to provide a strategy that reflected on the new initiative and how it should be implemented (objectives). Lack of clear strategy could prevent forming a structure for overseeing it. People seemed to be unsure and their meetings were “put on hold”, until they received (reviewed) the strategy and clarified accountabilities and ownerships. As a good example, a DHB manager talked about the alliance structure they formed with PHOs to oversee and decide about resources for the programme in their district:

“...we have what we call an alliance agreement which says that we will work together to integrate care and improve outcomes and we will share in the gains from that ... And we will govern this thing jointly so we will make decisions collaboratively rather than through a traditional sort of DHB relationship” (DHB, participant 1)

Meso-level governance was also about giving advice and direction to the meso-level managers on how to do change management. For instance, the change managers could see which part of the current system could be a place to which to link this programme:

“...they had a Chronic Care Management System in priori care, so they’re using [programme X] the tool to sit over and redefine their existing programmes of work.” (DHB, participant 2)

One interviewee, a meso-level project manager, talked about her role as providing the binding and support, and finding a way to oversee and resource what was happening in the local settings: “So what I try to do is to sort of pick up those pieces, those threads, and promote it and try to get sponsorship for the project to gain some governance”. It can be implied that there was an overlap between leadership and governance functionalities within these relationships (see the next section).

**Reflecting leadership**

The last category of governance was about reflecting leadership. The governance group was the influential group that performed governance functionalities, such as overseeing tasks and deciding
about resources. In addition, they participated in controlling the direction by defining the strategies. There were instances of data that indicated reflections of leadership in what governance was concerned about, and that people were wearing different hats depending on the situation. The idea of wearing different hats was introduced by de Bono (1995) to explain how we can make creativity and innovative thinking part of our thinking. The different hats explained by de Bono use different thinking modes, each for a limited time (i.e., data gathering, intuitions, judgment and caution, positives and benefits, alternatives and creativity, overview) (de Bono, 1995).

One of the instances of the data showing that governance should reflect leadership relationships was about supporting change. If people required that the change be put first in leadership relationships, then the governance structures should follow that perspective. Other examples of open codes and quotes relevant to reflecting leadership as governance relationships are shown in Figure 7-8.

In summary, the findings about the governance category indicated that, although I used the traditional hierarchical definition of governance (P. C. Smith et al., 2012), other aspects of governance were appearing. The expected subcategories were deciding about resources and overseeing tasks. These aspects of governance were similar to Smith et al’s (2012) hierarchy model. The two subcategories of governance that added new insight about this role were structures at different levels, and reflecting leadership. The data indicated that there was a lack of governance structures at meso-levels to provide clear strategy at this level and the objectives compatible with existing meso-level priorities and requirements. It was also required to direct the change management activities in this level. Moreover,
some parts of governance relationships were reflecting leadership relationships. These relationships included supporting change, providing a core of consistency, using power relations, and controlling the decision making processes. This new insight about governance (i.e., reflecting leadership) can be compared with Jessop’s (1998) definition of governance. He refers to reflexive self-organising relationships among actors in a complex environment, that include dialogue, resource sharing, and managing contradictions (Jessop, 1998). It can be said that his view of governance is closer to a relational view of leadership in which ongoing organising activities by a group of actors lead to order and bring change (Uhl-Bien, 2006). Therefore, reflecting leadership as part of governance activities (by wearing different hats as de Bono (1995) described) was one of the new learnings obtained from the study.

Regarding multiple governance structures at different levels, Burns, Hambleton, and Hoggett (1994) indicate that moving from hierarchy to networks of governance enables democratic involvement. This involvement is suggested to contribute to local communities’ impact on health systems and their policy making structures (Callaghan & Wistow, 2006). It is said that the structure of relationships in these systems has significant impact on forming a local space for involvement of locals and public (Callaghan & Wistow, 2006). This purpose of involving local users is similar to the co-design characteristics of the shared care programme. Hence, it seemed to be more appropriate for the programme to move from the hierarchy model to a network model (as described by Smith et al. (2012)). This move could then be accomplished by better meso-level governance structures. Therefore, it seems the importance of this concept is also supported in the literature. The following section presents the last category found in the data, i.e. a contextual category. The relationships between all these categories (i.e., HIT innovation, leadership, governance, and the context-specific category) will be identified in the next chapter.

7.2.4. Conflicts: A contextual category

In the previous sections, I described the core category of the findings, intervening in the health system. This category emerged from the most relevant constructs to the research question. They will be the focus of theory building when it comes to finding relationships between the categories and subcategories. There was also a smaller category called conflicts, with fewer incidents, that was rooted in the context of the study and interrelated with the core category. It was worth delving into this category to understand how it related to the main categories (i.e., HIT innovation, leadership, and governance) and what it meant.

The least highlighted category was conflicts. Although the conflicts were very context/case based, it was worth looking at examples on an abstract level to be able to sensitise future Health-IT
studies/experiences. The interviewees in the programme reflected the conflicts from individual and context perspectives (Table 7-14).

<table>
<thead>
<tr>
<th>Subcategories</th>
<th>Selective codes</th>
<th>Open codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conflicts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ambiguity</td>
<td></td>
<td>Original intention, unclear responsibilities</td>
</tr>
<tr>
<td>2. Incompatibility</td>
<td></td>
<td>Adoption role vs innovator’s, incompatible reactions, continuous exposure</td>
</tr>
<tr>
<td>3. Subjectivity</td>
<td></td>
<td>Tool as the innovation, filtered feedback, presumptions</td>
</tr>
<tr>
<td>Context’s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conflicts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Business &amp; profit</td>
<td></td>
<td>IT companies, transcendent values vs business profit, leader with business profit</td>
</tr>
<tr>
<td>2. Scope</td>
<td></td>
<td>Change outside the scope, narrow focused groups</td>
</tr>
<tr>
<td>3. Priorities</td>
<td></td>
<td>Existing priorities vs promised value, resources and progress in health, risk in people’s lives</td>
</tr>
</tbody>
</table>

**Individuals’ conflicts**

A group of conflicts found in the study resulted from individuals’ perceptions. The data indicated that some of the issues that emerged in Chapter 6 as cracks in the innovation, could become conflicts based on individuals’ perceptions. For instance, a variety of assumptions found in Chapter 6, became a source of ambiguity and a conflicting challenge. This ambiguity was even in people’s interpretations of the original intention of the programme including fewer hospital presentations, having electronic care plans, or a shared way of care provision.

Conflicts were also in the issues perceived as incompatible with individuals’ expectations. Sometimes, the clinical users of the product innovation perceived their role as adopters only, whereas they were supposed to be innovators too and have input into the development of the tool and the new way of work. If users did not expect to act as innovators and be creative in this process, they could find it unsatisfactory to adopt the basic tool and try to understand how they should change their work by using it. This conflict could have been one of the reasons for the low adoption rate reported in the programme. It may have been caused by the delays in communicating to the users that this was a collective act, as found in the document analysis.

Sometimes people had incompatible reactions (to the innovation) when they confronted the reality of change. Clinicians were supposed to shift their thinking, e.g. consider patients’ empowerment. The conflict was sensed when clinicians discussed their reasons for restricting patient’s access to care providers, or to their personal health records.

The last individual source of conflict lay in subjectivity. For instance, some of the programme’s members considered the tool as the innovation, and neglected the process and the service parts. This
was the opposite of what was supposed to happen. Some of the leaders also mentioned their concerns about subjectivity in the reports they had about the patients’ experiences. This filtered feedback came from clinicians’ perspective, or from those who evaluated the programme. This resulted in uncertainty when people in the strategic level were supposed to be making decisions, as they were not sure how they should interpret the information they received from lower levels. Finally, some of the presumptions, e.g., about the most active group of users, caused another type of individual conflict. Therefore, nurses, who were not expected to take a key role in the uptake and use of this innovation, were represented to a lesser extent in the initial arrangement and formation of the formal leading groups.

**Context’s conflicts**

Business and profit concerns were sources of another group of conflicts in this context. One of the technical providers (IT companies), that held a considerable market share in health sector, did not see profit in compliance with the programme’s expectations (e.g., in using suggested standards and changing their ISs for interoperability). In another instance, some of the leaders saw their business interests (in other organisations) in conflict with the programme’s current decisions (leader with business profit). In addition, value created for care professionals and executives in regard to providing better quality of care for patients was a transcendent value that might require losing some business profits. This was another conflict especially in primary care that was run privately.

When people did not look further than the focus of their respective groups’ requirements, they could find conflicts in their scope of work and the features that were offered to them. There were also some changes outside the scope of this initiative that, if not solved, could conflict with the programme. The health system’s context also had priorities that could not be easily risked by exploring new ways of work (risk in people's lives). These sorts of context conflicts could be why it was mentioned that progress in the healthcare research is way ahead of the technologic resources and infrastructure in the health sector.

In this section, I have explained a small (fewer instances of data in comparison with the core category) contextual category emerged from data, i.e. conflicts. The connections and inter-relationships between this category and the main categories (i.e. HIT innovation, leadership, and governance) will be discussed in the next chapter.
7.3. Discussion

The findings in this chapter indicated that the core category of the study i.e., intervening in the health system, included three main categories: HIT innovation, leadership, and governance. I have described these categories and their subcategories. Moreover, at the end of each category, and some of the subcategories, I provided a summary with links to the existing literature.

Complexity was a characteristic of the innovation development process in this study that can be framed against existing literature about complexity of innovations (e.g., structural complexity and specialisation in Damanpour (1991; 1996). The stages of innovation development found in the thesis were similar to stages described by Baregheh et al. (2009) (i.e., idea generation and development, engagement, implementation and adoption). Moreover, these stages had overlaps and were not sequential. The idea development stage included development of the process and product innovation in an interwoven way. The process was being developed with an open-collaborative model (defined by Baldwin and von Hippel (2011)), while the product was being developed with a producer model (as in Baldwin & von Hippel, 2011). This interdependency between the product and process innovation, and their different development models, was interpreted as a challenge in the innovation process.

Findings relevant to the adoption stage also confirmed and complemented the existing literature. Individual adoption issues emerged mostly confirmed the literature, including usability (Davis, 1989), usefulness (Davis, 1989), previous experience (Venkatesh et al., 2003), and compatibility (Backer et al., 1986). Adoption–use preference was another individual issue emerged that could extend what Lin (2003) explained as use factors. This use factor found in the study indicated that clinicians might decide to use another technology, or perform another task at hand, based on their perceived priority or preference for the tasks. Furthermore, I understood from the data that durability of innovation might impact clinicians’ adoption decision. This finding also extended what Lin (2003) found regarding the impact of discontinuation of a technology on people’s review of their adoption decision. The findings about properties of innovation extended the literature by stressing the innovation’s problem solving, vision, and value provision properties. It also confirmed other common properties of innovation including newness (Van de Ven, 1986), change (Damanpour, 1996), and cost (Hwang & Christensen, 2008).

In the leadership category, I discussed four subcategories of leadership: influence, control, value creation, and support. The influence came from sources such as formal and informal leaders, power, vision, strategies, and external organisations. These sources engaged people, inspired them, drove the innovation through challenges and transferred leadership to the other levels. Power is a source of
influence mentioned in literature (Bolden, 2011; Hertzfeld, 2007). Expert power, as mentioned by Krause (2004) and Raven et al. (1998), was one of the sources of power highly observed in this study. Unlike many studies of leadership that focus on individuals’ traits and behaviour to influence this process (Fairhurst & Uhl-Bien, 2012), I followed a relational view in this study. Hence, the study revealed influential sources other than formal and informal individuals who influenced the direction of the innovation. It indicated that the vision, strategies and external organisations can also be important sources of influence. Similarly, Krause (2004) discusses that delegating autonomy and participatory style of leadership is more influential in innovation processes. This view supports my relational view in studying leadership.

Regarding the meaning of control in leadership relationships, most of the existing studies consider it as managerial control. This managerial control aims to instruct people about their job, monitor, evaluate the progress, and use rewards and punishments (Bechtel, 1993; House & Howell, 1992; Pavlovskas & Kuzina-Merlino, 2013; Rotter, 1954). In my study, the control was seen through goals and strategies, coordination, and providing consistency at different levels of initiative. This can be called leadership control which is similar to the meaning of control described in Horwitz and Currie (2007), and Larson and Park (2014).

Creating and communicating a vision was raised as part of value creation activities, similarly to the existing leadership literature (Bamford & Daniel, 2005; Jain, 2014; Kotter, 1995; Kramer & Crespy, 2011; Nanus, 1992). Moreover, the study emphasised the role of analysing users’ perception of usefulness in creating value.

The last leadership relationship was about support. Supporting the change desired was required rather than supporting individuals, and training them, as in House and Howell (1992), Chang and Johnson (2010), and Spetz and Keane (2009). The meaning of support in this thesis included giving time to the innovation process, taking risks, linking the initiative to the existing binding structures, enabling users to feel bound to the other levels of the initiative, and coordinating change across multiple organisations. There are studies in the literature that express similar meanings of support in leadership of HIT initiatives (Ingebrigtsen et al., 2014; Jain, 2014; Paulus et al., 2008).

The next category discussed was governance. Some of the subcategories of governance were similar to the existing definitions of hierarchy governance (as explained by Smith et al. (2012)), i.e., deciding about resources and overseeing tasks. Other aspects of governance that added more insight about it were governance structures at different levels (especially meso-levels) and reflecting leadership relationships. These aspects of governance were compatible with Jessop’s (1998) definition of
governance, and aligned with the relational view of leadership. The literature also supports the idea of having multiple levels of governance to improve public involvement in health systems. This is explained in the network model of governance by Burns, Hambleton, and Hoggett (1994). As the shared care innovation also intended to have the contribution of users in the improvement of the healthcare delivery system, it made sense that they tried to move from the hierarchy model to a network model (as described by Smith et al. (2012)).

The last category discussed was about conflicts. It indicated that there were some conflicts rooted in individuals’ perceptions (e.g., subjectivity, ambiguity, and incompatibility) and other conflicts that were context-specific (e.g., business profits, scope of work, and priorities). It is expected that these conflicts will have inter-relationships with other categories discussed earlier. Therefore, I explained them in this chapter to be able to examine their connections with other categories in the following chapter.

7.4. Conclusion

This chapter took the findings from the previous analyses and wove them into the concepts and categories found in the last stage of interviews. The chapter also elaborated the analytical procedure and the layers of conceptualisation to indicate how the theory emerged grounded in the data. The findings responded to the first objective of the thesis regarding major categories in the social processes of leadership and innovation development in this Health-IT context. These categories were part of the core category emerged in this study, that is intervening in the health system. The following chapter examines the core category and its containing categories to find their connections and inter-relationships (the second research objective). It will be the last step to developing the theory in this study.
8.1. Introduction

The overall research question for the study was: How do patterns of behaviour in leadership and development of large scale innovations in a health IT context affect each other? In response to this question, I framed two general objectives: What categories can be found in data about social processes of leadership and innovation development in the Health-IT context?; and, how are these categories connected on an abstract level?

In the previous chapter, all the concepts emerged during the stages of data analysis were woven together to define the core category of the research, that included all the categories required to answer the first objective of the study. Now, it is time to carry out the last stage of this GT analysis to answer to the second objective of the study. This stage is called theoretical coding (Glaser, 1978). Theoretical coding is “the process of relating categories” (Urquhart, 2013, p. 106). It involves generating “statements of relationships” between the categories (Strauss & Corbin, 1998). It is where the theory is built (Urquhart et al., 2010; Urquhart, 2013), and the new and original aspect of it appears (Glaser, 1978). The definition of theory by Strauss and Corbin similarly indicates the importance of this stage (1998, p. 15): “a set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena”; however, there is controversy among GT theorists over the way these relationships can be found (Urquhart, 2013). In this regard, Urquhart (2013) describes four components of a grounded theory as representation (in words, symbols, diagrams, etc.), constructs, statements of relationships and scope (generality or limits of the statements).

In this chapter, I generate statements of relationships and represent the theory in words and diagrams. The scope of the theory will be discussed in the next chapter (Chapter 9) and cover all the components of the theory. The connections between categories are demonstrated, in this chapter (Chapter 8), using examples of data incidents, and “integrative diagrams” (as termed by Strauss, (1987)) to provide representation of the theory. These diagrams are generated to visualise and integrate a lot of the information obtained after coding and writing memos (Urquhart, 2013). Strauss (1987) suggests that there should be a limited number of successive diagrams that relate to each other. The connections between categories and subcategories are depicted in the diagrams only to the extent that they are comprehensible, and informing of the main messages of the theory. It should be noted that from now on I mostly use the term connections to refer to the relationships between
categories only, to prevent them being mistaken for relationships as leadership processes. At the end, I compare the major connections found with the existing theories in the literature, to indicate how the substantive theory emerged confirms, contradicts or complements existing theories (Urquhart, 2013).

8.1.1. Method

To conduct this step, I followed Urquhart’s (1999) suggestion of looking into Glaser’s (1992) over 40 theoretical families and the semantic relationships identified by Spradley (1979), to sensitise myself to the relationships that might exist, and as a general principle (Strauss, 1987), to help in generating appropriate connections between constructs. This is one of the points of deviation for followers of Glaser’s classic GT, from Strauss & Corbin’s (1990) approach by which data is considered against a fixed coding paradigm (conditions, context, interaction strategies, interventions, and consequences) to develop relationships. I was aware, therefore, of not forcing any theoretical codes and only used them to inspire thinking about how theory could be built. Developing my own theoretical codes that best described the connections in the data (as suggested by Glaser (1978) and Urquhart (2013)) was more appropriate, and in compliance with creativity of theory building. In addition, it was possible to think of an emerged category as a relationship between two other categories as well. The next technique I made much use of for leveraging my ability to theorise, was taking a lot of theoretical memos during coding stages and reflecting on my ideas, as they came to mind, about possible connections between categories.

The other tool I used, to make sure there were many instances of data supporting each connection, was the query feature available in Nvivo software. It allowed all the texts that were coded with two specified concepts to be pulled out and the results summarised in a table, that indicated number of incidents and number of sources (comparable with participants). Therefore, the connections of the most incidents mentioned by most of the participants could be found. If the number of people talking about two selected concepts was less than half of the interviewees in each stage, the connection was not considered as important, unless the lack of connection struck me as being important to think about. To contextualise the theoretical coding process, I reviewed the immediate context around each chunk of data of interest. It helped in finding the direction of connections and the best code to describe the connection. During theoretical coding, finding parts of data that were missing a code was quite likely. It happened because at the time of theoretical coding all the text excerpts around a specific issue were looked at together, making it easier to realise a connection that was probably missing due to not being coded. Therefore, the open/selective coding was also refined when connections were investigated.
In the following section, the connections between categories are discussed and the logical path to reaching these statements is demonstrated to help an understanding of how the theory was built.

### 8.2. Connections between categories

The core category emerged from data i.e., “intervening in the health system”, is summarised in Table 8-1 with a short description of each subcategory based on explanations given in previous chapters.

<table>
<thead>
<tr>
<th>Core category</th>
<th>Main categories</th>
<th>Subcategories</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health-IT Innovation</td>
<td>Development process</td>
<td>It was known as complex and evolving. It included participation of users of innovation in the co-design process. The stages of development were an overlap of idea generation, engagement, development, adoption and implementation processes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Properties</td>
<td>Apart from newness and bringing change, the innovation was to solve a problem. It carried a vision that could provide value to the users while incurring costs. The innovators contributed in development of the basic idea into a concrete reality. They worked in various stages of development while giving input to the idea generation and development stages.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>Three types of product, process and service innovation were being developed in this innovation.</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>Influence</td>
<td>There were different sources of influence that affected people’s behaviour regarding the innovation: the vision, power &amp; authority, formal &amp; informal individual/groups, strategies, and external sources. There should be levels of influence for such multi-organisational innovation.</td>
<td></td>
</tr>
<tr>
<td>Supporting change</td>
<td>People involved in the programme needed to feel bound to the flow of the innovation development and supported. The ways of indicating support and binding: high level decision makers’ consensus before starting to perform; giving time to the development process, taking risks and bearing with emergence and unpredictability of innovation; and binding the programme to the existing structures. People should not think they were isolated.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control or Structuring behaviours</td>
<td>Relationships that provided consistency within the initiative and fitted the programme within the big picture. It included strategies and goals that were congruent with national and regional strategies too. A meso-level structure was critical to transfer leadership between levels, to clarify priorities, to provide consistency among current projects, and to create a sense of ownership. Decision making models and political behaviour were other forms of control.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value creation</td>
<td>It included creating a vision, communicating reason/urgency for change, internalisation of vision, providing work motivations, and improving usefulness perceptions. Motivations included pervasiveness, reimbursements for time and effort, and uplift in roles. Raising awareness of innovation’s benefits could increase the demand in users. Usefulness perceptions could be improved by indicators of outcome improvement, test phases, peers’ influence, and reviewing plans based on feedback of the perceptions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governance</td>
<td>Deciding about resources</td>
<td>Authorities’ decisions on resources affected motivations and ownership perceptions. Resources included funding, time and workforce that were required for innovation development stages. Responsibilities then needed to be delegated and resources allocated.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overseeing tasks</td>
<td>It included indicating accountabilities, delegating authorities, defining strategies and objectives, and providing professional advice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reflecting leadership</td>
<td>Governance groups reflected leadership relationships to some extent. They supported change, influenced via power relations, controlled the decision makings, and provided a core of consistency.</td>
<td></td>
</tr>
</tbody>
</table>
Levels of structure

There needed to be levels of governance structure. Especially at meso-level it could help to provide a strategy that reflected on the new initiative and how it should be implemented.

Conflicts

Individual

Individuals could be a source of conflicts. People’s perceptions were not aligned even in the strategic levels; subjectivity caused issues in their view of vision and their interpretations. They also made reactions incompatible with expectations when they confronted the reality of change.

Context

Contextual conflicts had roots in business profits, changes outside scope of innovation, existing priorities, and context-specific risks.

Reviewing memos about the main categories revealed a strong connection between the Health-IT innovation and its leadership relationships. To explain the meaning of them, I will present examples of the most discussed connections between each pair of categories, from both sides. After describing each connection, I will present an integrative diagram of those highlighted connections to help build the theory.

8.2.1. Highlighted connections found

Apart from reviewing theoretical memos to find the connections and interpretations that came to my mind during stages of data analysis, the query feature in Nvivo software was also used to extract the most highlighted connections according to participants. The Matrix format of query making in Nvivo allowed two sets of categories (e.g., innovation vs leadership) to be selected and all the instances of data that were coded in both to be retrieved (as shown in Table 8-2). The number of instances for each pair of subcategories is shown in a tabular format. It was possible to click on each number and see the texts coded behind the two selected subcategories. In this section all the significant connections emerged from these tests are explored using theoretical memos. It should be noted that the word “significant” is used with specific meaning in this chapter. By significant connection, I am referring to the connections highlighted by the participants, which means I have found many instances of data that indicate the connection discussed between each pair of categories/subcategories. Hence, when I provide the number of connections using Nvivo software, it is not to be confused with the notion of “significance” as used in statistical analysis of quantitative variables. Here, the numbers only indicate relatively high incidents of qualitative connections.

Table 8-2 represents how the innovation category was connected with leadership based on the number of instances of data. The significant connections are circled. The first pair of connections in this group was innovation development versus influence, which held most of the incidents, and will be discussed next.
Table 8-2: Number of connections between innovation and leadership subcategories

![Table 8-2](image)

**Innovation development vs influence**

Leadership was indicated as being able to affect the development process via influential relations. Most of the influence was generated from the vision, power, and informal and formal influencers. For each group of users, the part of the vision that spoke most to them seemed to have influenced their adoption. If a stakeholder with power did not see benefit in listening to the users’ feedback and concerns, they could affect the adoption stage negatively. Adopters on the other hand, needed power in their working environment to be able to apply the new model of work. Otherwise their adoption would not be sustainable. Finally, informal and formal influencers could affect the development stage by using the innovation, promoting it or showing its benefits to their peers.

On the other hand, the innovation development process also changed the process of influence. For instance, things that emerged during development caused changes in the combination of formal influencers and potentially helped polish the vision. Complexity of the development also made people stop and think about changing their strategy for causing a big momentum. This strategy then became one of the sources of influence. During the engagement stage, programme members could find interested people who could then become an influencer by finding new external connections and helping influential relationships to evolve.

In summary, there seemed to be a bidirectional dynamic (forces) between the development process and mechanisms of influence. These forces of change were rooted in complexity and emergence of the development process, and its engagement stage (Figure 8-1). I interpreted this connection as: development process and influential relationships manipulate/change each other.

![Figure 8-1](image)
Innovation development vs value creation

The next connection investigated how value creation and innovation development were related. Most of all, creating vision drove the adoption stage. However, the vision might be seen in conflict with individual’s experience, or the culture of the system. For instance, clinicians were educated to be in control of the medical procedure; seeing patients at the same level of control was challenging for them. Thus the vision needed to be internalised before it could create value for them and then affect the adoption (development process). Similarly, any features of the innovation that could create value for decision makers at the meso-level affected the way the innovation was developed in that area.

The data indicated that change preparations, as part of implementation stage, might also be needed before value could be created for some users. For instance, patients might be unaware of the benefits and opportunities that shared care planning could bring to them. Similarly, project management activities were required within the implementation stage to create outcomes and indicate values. As an example, setting priorities in change management was a way of communicating an urgency for change and thus creating value for people to participate. Raising awareness during engagement could be a means of creating value, when the informed person came to see a work motivation in the innovation.

There were other links between these two categories that seemed bidirectional. Work motivations were created in shared care when many people in the working network were using the innovation (i.e., high adoption). The adoption, though, could not happen easily unless this motivation was realised or provided. So a cycle of interdependency could be seen between adoption and value creation. Similarly, the complexity of the development process was related to provision of work motivation through having a network of users (pervasiveness). On the other hand, the complexity of realisation of that motivation delayed provision of it.

In summary, innovation development was a means to create value for people, and value creation was a means to develop the innovation (Figure 8-2).
Innovation development vs support

The data revealed supporting change as a key requirement for innovation development. Programme owners (e.g., innovators, implementers, managers) needed to support implementation by accompanying local implementers/adopters in learning and refining the implementation process along the way. Micro level managers could support innovation by giving time for it to grow and allowing their subordinates to adopt it if interested. Then their colleagues/peers could perceive usefulness at some point and adopt the innovation. Interactions that allowed users of the new product to realise the improvements in the developments, and gave them continuous binding to the whole process, were needed to sustain their contribution in development. The interactions could identify the gaps and issues that prevented people from using the innovation further and getting involved in the innovation development.

When authorities and innovators thought about the right change rather than the right tool (putting change first), it helped them take better decisions about implementation and better face the complexity of development. They saw where the implementation could be funded within their existing programmes. Managers also needed to accept any outcomes from innovations and feel supported to take risks.

It seemed people needed to be given confidence and permission about the way they were doing the work. Even though they had been introduced to a new system and asked to find out how the new model worked for them, they still needed to be reassured after a while about whether they should change any part of the process. In summary, supporting change seemed to be a condition for the innovation development process to take place (Figure 8-3).

Innovation development vs control

As the innovation moved forward, goals and strategies needed to be reviewed based on the learnings. If not, the next steps could have been “emerging and bubbling away”, as mentioned by an interviewee, due to not re-adjusting and forming the emerging innovation (lack of control). Having multiple groups of users across the health system caused complexity and confusion for the IT tool developers. Formal leaders of the programme needed to collaborate to adjust/control the expectations of these groups to a level that was workable for the IT developers.
Providing consistency between existing evolving and emerging innovations in a region adjusted their use, so that the best available features of each innovation could evolve in the region to match the users’ needs. Working on consistency could reduce costs by not developing the same feature in different ways in multiple innovations. In the beginning of idea generation and development stages, programme leaders and innovators’ communications with other health programmes were other ways of generating consistency. Programme leaders and innovators talked to the policy makers, for instance, to consider issues that might affect the emerging innovation within the health sector. These communications were required as there seemed to be no formal mechanisms of consistency (i.e., social construction of leadership relationships).

Specifically, meso-level leadership was seen as an important control for implementation of the innovation. Some leaders decided to implement the innovation in a customised way to solve their current regional problems. They started with a familiar short term goal and allowed the innovation to evolve on top of it. Thus, they helped to move the implementation forward although the end point was not clear. They could also adjust people’s pace of action regarding the change required, or rearrange available funding in the region toward the innovation, to influence adoption.

It can be said that controlling behaviours were leadership relationships that adjusted the innovation development process (Figure 8-4).

Properties of innovation vs influence relations

Vision and innovators were among the properties of the innovation, as found in Chapter 6. They were also part of influential sources of leadership (Chapter 7). In fact, innovation was defined based on a vision and when the vision was articulated and communicated among members it became a source of influence that could gather people from multiple organisations. Innovators, similarly, played a role as Influencers (drivers) of innovation. Therefore, it can be interpreted that some properties of innovation, including the vision and innovators, contributed in the influential mechanism of leadership.

From the other direction, influencers affected change (a property of innovation). Formal leaders were part of educational, practical, and administrative organisations in the health system where shared care was their interest. The change that the programme could bring was being discussed in their affiliated
organisations and, therefore, these interactions could affect the change in the future of shared care. There were also dedicated champions who were using and promoting the innovation to affect the change movement. Nurses were also among informal influencers who emerged as one of the influential sources of change in this programme. Power relations among influencers also manipulated the change process.

In summary, some properties of innovation were part of the influence mechanism of leadership (an overlap between leadership and innovation). Influential sources could manipulate properties of innovation (Figure 8-5).

**Properties of innovation vs value creation**

The vision needed to be defined and presented in a way that created value for different groups of users. When people perceived usefulness of the innovation they could adopt it and change their own behaviour as well. The observed behavioural change could create value for some people to join the movement (innovation properties affect value creation). Similarly, some people perceived the change (a property of innovation) as a lever to improve their job and thus they sensed a value in innovation. The innovation was defined as there to solve a problem. Thus, if the problem was perceived by a group of people, then solving it could create value for them.

On the other side, if the innovation created value for a large target group, the adoption of innovation might reinforce the movement and affect the degree of change in the system. Accordingly, pervasiveness of use was seen as value in the innovation development, especially if it included a wide range of everyday activities of a user. Therefore, it could be seen as a cycle beginning in the innovation properties to contribute in value creation, and then going back to affect the degree of change caused by innovation (Figure 8-6).
Governance vs leadership

It is now time to look at the connections between the leadership category and governance. Table 8-3 shows the results of a query in Nvivo that revealed most of the incidents of data were supporting the connection between overseeing activities and influence. It should be noted that I changed the settings for this query to get better resolution of data. It meant instead of looking at the texts that were coded as the two specific categories, I asked Nvivo to look at the content near the coded texts as well (i.e. within 5 words). As can be seen these connections were not as strong as the previous connections between innovation and leadership. The connections that came up more strongly will be described next.

Table 8-3: Number of connections between leadership and governance subcategories

<table>
<thead>
<tr>
<th>Activity</th>
<th>Overseeing</th>
<th>Influence</th>
<th>Overseeing</th>
<th>Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciding about Resource</td>
<td>13</td>
<td>8</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>Overseeing tasks</td>
<td>21</td>
<td>5</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>Reflecting leadership</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Structures at different times</td>
<td>9</td>
<td>12</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Weakening points</td>
<td>11</td>
<td>16</td>
<td>11</td>
<td>16</td>
</tr>
</tbody>
</table>

Overseeing vs influence

Defining the scope of the intervention was one of the governance group’s overseeing tasks for the shared care programme. This task affected the target zone and scope of influence. The selection of governance group in the first place was based on the initial decisions at NHITB about the scope and stakeholders. Hence, overseeing tasks was a strategy for selection of formal influencers. Moreover, when people who were in formal positions of governance decided to delegate power to a group or individual to be accountable for an aspect of work, they used it as a strategy for influence (i.e., overseeing is a strategy for influence). On the other hand, authority and power of the high level management groups/organisations allowed them to structure the focus of the project around their own region. It means, power and authority, as influential sources, could drive (manipulate) overseeing tasks. Therefore, this could be seen as a bidirectional connection between governance and leadership relationships (Figure 8-7).

Figure 8-7: Connections between overseeing tasks and influence
**Overseeing vs control**

Indicating accountabilities and strategies via overseeing activities was another form of control and structuring of people’s behaviour. Leadership relationships were shaped over those strategies. In fact goals and strategies were one of the control agents of leadership that could indicate priorities for implementation. Thus, governance groups who developed strategies affected leadership as well. An umbrella governance group within the health sector also brought consistency among related Health-IT initiatives, and thus performed as another control entity for leadership of the programme.

Indicating accountability at meso-levels was another issue that seemed to be a critical activity of governance structure. People working at local levels expected to be clear about whom to reach in regard to the issues they faced after the test (pilot) phase of the project. It was not only for technical problems, but also for issues around collaboration with other organisations involved. In fact, meso-level leaders emerged as a control role that needed to be formed by delegating responsibilities to them. Therefore, it seemed governance structures at meso-levels were needed to help oversee the initiative and thereafter control it by shaping a structure for responsiveness.

On the other hand, political behaviour, that was also a controlling relationship, could affect the scope of work and thus the overseeing of the initiative. If the accountability was not clear, powerful actors (stakeholders) could take control of the structuring of the initiative too (Figure 8-8).

![Figure 8-8: Connections between Overseeing tasks and control](image)

**Deciding about resources vs influence**

Influential people affected the process of finding resources to provide long-term commitment for the initiative. The power of authorities could also affect the resources available (funding) for the initiative. Resources were needed for generation of big momentum (influence), as financial rewards to motivate people and to compensate their effort. The time and passion of informal influencers were also part of the resources that could help in moving the initiative forward. External organisations (such as Health WorkForce New Zealand) could be part of the influence process by collaborating in provision and definition of new roles (i.e. resources) in the health system for the innovation (Figure 8-9).
Therefore, there was a bidirectional connection between governance (i.e., deciding on resources) and leadership (influence) relationships. It can be said that influential sources manipulated resource allocations, and deciding on resources was a strategy for influence.

**Resources vs development process**

Deciding about and aligning resources seemed to be one of the governance activities required to keep up with the implementation goals. Resources were needed to enable development and adoption of the IT tool, to dedicate clinical champions to promote innovation, to provide capacity for supporting/engaging volunteer users, to make timely responses when the momentum for change was there, to enable change preparations, to compensate extra efforts of work forces required, and to define new roles or free up existing workers’ time where they had no extra time to commit.

They needed to govern innovation development until other decision makers for the resources in existing organisations saw the outcome as mature enough to allocate resources, and take the ownership of the innovation as an existing property of their processes (Figure 8-10). It can be said that deciding on resources (i.e., as part of governance) was a strategy for development process.

**Conflicts vs other categories**

Table 8-4 suggests that conflicts could be highly associated with innovation and leadership categories, but not with governance. In the next two sections, the meaning of these connections will be explored.
1) Conflicts vs innovation

It was understood from the data that most of the conflicts in the innovation category were about the development process. Some of them were rooted in the context of healthcare and some were individual-dependent. Contextual conflicts that could disrupt innovation development process included existing priorities and risks associated with a new unproved way of work. Other conflicts were business profits that were in conflict with adoption of new way of work, as there were not enough financial incentives. Moreover, the complexity of the development process in the health context was another source of conflict. The complexity was due to the change required in medico-legal rights to enable development of the new model of work, that put all health practitioners at the same level of responsibility of a patient’s care. The degree of change expected could also have been in conflict with the implementation plans and resources available.

Some individual conflicts were as a result of ambiguity of the innovation as it was emerging and evolving. People’s perception of the most active users of the innovation changed during the life of project. Some users expected to see a bigger scope of problem solving by the innovation and this caused some conflicts in their responses. Lack of clear strategy for implementation of the innovation was another ambiguity that could cause conflicts in individuals’ behaviour. Incompatibility of the tool with how people worked, or wanted to work, was another point of conflict that disrupted adoption. Moreover, if users focused only on their narrow area of work and did not consider the other care providers involved, they could act in conflict with the vision of innovation.

2) Conflicts vs leadership

Business conflicts of external organisations with the innovation and its associated change in the healthcare context were considered by the formal leaders of the programme, who had affiliations with those organisations. This affected the influence process. Some contextual conflicts were about changes required in the health system that were outside the scope of the programme. Therefore, it was not easy to find a solution. The vision of the programme also required a change in the mindset of health practitioners, otherwise they could find it to be in conflict with their work and the culture of healthcare system.

Political behaviour to control the direction of decision making in the programme was also unclear for some members and caused conflicts, as their understanding of this political behaviour was subjective and not based on facts. Furthermore, subjectivity caused some users to perceive the programme as an IT project. This perception caused conflicts in the way programme members had to start the
influence process within organisations (i.e., starting from IT teams rather than focusing on process analysts).

In summary, there seemed to be forces that came into conflict with the innovation and leadership processes from the context of the health system, of which individuals formed a part (Figure 8-11).

![Figure 8-11: Connections between conflicts and the other categories]

### 8.2.2. The integrative diagram

Now that all the significant interrelationships between the main categories of the study have been discussed, it is time to integrate these statements of relationships within a diagram. It should be noted that the intra-relationships between subcategories in each category are not depicted and discussed here, as they had less relevancy to the research question, and could add undesired complexity. Figure 8-12 presents the resulting theory, i.e., Leadership of HIT innovations (LHIT) theory. It indicates the core category (intervening in the health system) which emerged within the context of the health system. The main categories in the core category were Health-IT innovation, leadership, and governance processes. The interrelationships between these categories are depicted in the connections (arrows), based on what was discussed in section 8.2.1.

This theory was built grounded in the data from the Health-IT innovation investigated. However, it can stand independently as a substantive theory (Urquhart et al., 2010) and be informing for other initiatives that aim to build an innovation in HIT context. The generalisability and other criteria to evaluate a substantive theory will be discussed in the next chapter. The rigorous procedure of GT enabled generation of a theory that can be modified and applied in other situations, considering that the relevant context will emerge in the new application and cannot be developed in advance (Glaser & Holton, 2004)

As can be seen in Figure 8-12, leadership had an intersection with innovation and governance. The former was due to the connection that emerged indicating some properties of innovation were part of influential leadership relationships. The latter was because one of the properties of governance raised was reflecting leadership. It seemed to be appropriate to indicate this possible intersection
between leadership and governance, although the connection was not highly significant based on the number of instances in the data. Other connections summarise the interrelationships discussed in section 8.2.1, although subcategories were removed for better readability of the diagram. Instead, the meanings of the subcategories are reflected on the connection lines where necessary to increase the semantic meaning of the diagram.
is a supporting condition for

adjust behaviours

is a strategy for

enables/is a strategy for

is means for

Manipulates
The connections depicted in the diagram are compared with literature in the following section, to see how the theory positions itself against the existing HIT innovation theories.

8.2.3. Comparisons with literature

At this stage it is suggested to leverage the theory by comparing it with existing theories in the literature to indicate how the substantive theory emerged confirms, contradicts or complements them. Relating the theory to the literature will improve its analytical generalisability (Urquhart, 2013). In order to do that, the theory has to be at a “sufficient level of abstraction” (Urquhart, 2013, p. 130). It seemed to be appropriate to use the generated theory (i.e., LHIT), at its most abstract level (Figure 8-12), as the substantive theory for this study in applying the comparisons for the relationships and constructs emerging from it. A substantive theory is one of the levels of theory building using grounded theory, in which the researcher has moved on from the descriptive and analytical levels of conceptualisation, to explain the substantive phenomenon under study (Urquhart et al., 2010). The substantive theory is grounded in one area of enquiry but will be independent of the data analysed, and goes beyond it (Glaser & Strauss, 1967; Urquhart et al., 2010). It should also relate the categories (constructs) emerged as the last stage of theory building.

It should be noted that the next level of theorising would usually require undertaking theoretical sampling of different substantive theories in different disciplines, to enable building a formal theory (Urquhart et al., 2010). However, the limited timeframe of a PhD research project did not allow continuing the abstraction into the formal level, plus it was not in the original scope of the research question. In this section, constructs and connections found in the emerged theory will be compared with existing substantive theories found in the literature in the same area of research. This follows the idea that the theory will determine the ultimate relevance of the literature reviewed, in a non-committal manner, at the beginning of this research (Diaz Andrade, 2007; Urquhart & Fernandez, 2006).

The first relationship with many instances in the literature is:

Leadership influences innovation. This is through formal and informal influencers, external influencers, vision, power and strategies for change. There need to be levels of influence.

Formal Influencers (e.g., CEO, CIOs), informal clinical users, and coordinators, are all considered as sources of influence that affect innovations in the HIT field (Balasubramanian & Spurgeon, 2012; Spetz & Keane, 2009). Leadership is also significantly associated with influence on employees in their behaviour toward implementation of innovation (Erkutlu & Chafra, 2015). Interestingly, when Shortliffe (2005) explains his findings about HIT innovations, he describes one aspect of leadership as
educating the public and health professionals, such as through the impact of academic research, in changing attitudes about benefits of HIT. Although education was not raised in my data, it can be seen as an example of influence relationships that can affect potential innovators. Thus, for the future extension of this research, it might be interesting to see how educational efforts could be influential in HIT innovation development. Charismatic influence of transformational leaders was also stated, in Jain’s (2014) research on HIT innovations, as part of influence relationships of formal leaders. Having the participation of diverse stakeholders and clinical champions (Paulus et al., 2008) can be interpreted as another example of influence relationships in the literature.

Similarly, a systematic literature review by Ingebrigtsen et al. (2014) reveals a number of associations between leadership and adoption of innovations. The review, conducted on studies from 2003 to 2013, investigates the impact of clinical leadership on HIT adoption. Although they did not include studies about informal leaders, they found that physician champions can indicate proactive leadership behaviour and affect the outcome of innovation adoption. This relationship is confirmed by my findings about informal leaders who could influence adoption. In one study (Lapointe & Rivard, 2007), disturbing or challenging power distribution between professionals or groups was seen to cause problems. Therefore, leaders needed to adjust the IT systems according to these power structures. This also confirms the association between leadership and innovation via power influence found in my study. There is also evidence of the impact of mutual partnerships between IT professionals and clinical leaders on adoption (Ingebrigtsen et al., 2014). It confirms another influential relationship found in the current study, which resulted from having a governance group that included both clinical and IT stakeholders.

At the end, it can be said that the category of external influencers in the present study, which came from relevant HIT initiatives within the health system, extended the influential relationships explained in the literature. In addition, extending the focus from individuals to the process of leadership brought attention to the vision itself, and strategies to apply change, as sources of influence. The theory also highlighted the importance of multiple levels of influence, especially in multi-organisational initiatives.

The second relationship framed against the literature follows:

Leadership creates value for innovation. This value creation happens by creating and internalising a vision, work motivations, improving usefulness perceptions, and communicating reason/urgency for change.

Bhandari, Tiessen, and Snowdon (2011) followed an individualistic view of leadership from Kouzes and Posner (1995) in a telehealth project. Their findings can be compared with some of the leadership
relationships found in my theory. They questioned the existing process and tried to inspire people to define a shared vision. These relationships can be seen as similar to my examples of value creation (i.e., communicating reason for change and creating vision).

Strategic or visionary leadership is found to be associated with the degree of risk taking and creativity in organisations regarding HIT (Leidner, Preston, & Chen, 2010). Although creativity or innovativeness refers to the rate of innovation development in organisations (Damanpour, 1991), Leidner et al.’s study still implies the association between visionary leadership and HIT innovation development. Visionary leaders create realistic and attractive visions. Therefore, their study supports the association between vision and value creation, and innovation development. Balasubramanian and Spurgeon (2012) also refer to the lack of visionary leadership as a barrier to integrated care development. Having a shared vision about the impact of HIT on healthcare was also raised in a practical experience, studied by Szydlowski and Smith (2009). The next supporting instance of literature is from Ingebrigtsen et al. (2014), who found that communicating vision and defining goals for realisation of the organisational strategy can positively impact adoption (and thus innovation).

Transformational leaders are considered as drivers of innovation (Jain, 2014). Although this is another entity view of leadership, the four aspects of transformational leadership can be compared against the leadership relationships found in my study. The first one that applies here is that a transformational leader inspires motivations. Jain (2014) also claims that leaders need to create and communicate a clear vision. This relationship can also be compared with value creation (vision creation and motivation) found in the theory developed from my study. In a similar innovation with a shared care programme (an integrated health system), Paulus et al. (2008) find that aligning incentives can also drive the new way of care. This is also similar to work motivations raised in my theory.

In summary, it can be said that the constructs in the theory extended the literature in terms of the relationships that can contribute in value creation. These constructs introduced the role of improving usefulness perceptions of users and internalisation of vision as part of value creation. Indicating improvements in the outcome, running test phases, reviewing plans based on users’ feedback and peers’ influence were also indicated in the theory as improving usefulness perception and creating value for users. Regarding internalisation of goals/visions, the theory indicated that people need to shift their thinking and go beyond their self-interest by adopting a high level value from innovation. They could then act upon the internalised vision/goals. This was in line with the self-actualisation concept in Maslow’s (1965) theory about hierarchy of needs. Therefore, the hierarchy of needs is a meta-theory existing in the literature that underlies my substantive theory. The emerged role of
internalisation of goals and vision in my theory indicated a gap within existing theories of HIT innovations that have ignored this factor.

The third relationship is:

Leadership controls innovation. The control is structured through decision making, meso-level leadership, political behaviours, fitting in the big picture, consistency, and goals and strategy setting.

The definition of complex leadership by Ford (2009), which is about binding networks at different levels to facilitate bottom up innovation, is similar to the need found in the theory for meso-level leadership. The meso-level leadership was required to control behaviours and transfer leadership in different levels. Complex leadership wants to create a place for knowledge sharing and thinking (Leidner et al., 2010). Similarly, knowledge sharing and thinking together were characteristics of the innovation development in the shared care programme, known as co-design. Lack of meso-level leaders who facilitate and control the knowledge sharing process was raised as a leadership issue in the study. Leidner et al. (2010) also found the positive impact of hospital CIOs on innovation developments in hospitals, as they would weave IT and business strategies together. This is another example of the role of meso-level leaders in finding a place for HIT innovation in the current strategies, indicating priorities within their organisation and so promoting the innovation. Hence, it supports the connection found in the theory about leadership relationships that control innovation development.

Paulus et al. (2008) indicate that creating policies to encourage collaboration between care providers has a positive impact on the development of an integrated health system. This can be compared with control behaviours found in my theory, such as goals and strategy setting. The existing research evidence, then, is supporting the link between leadership (control behaviours) and innovation development in the theory. Moreover, in describing leadership of HIT initiatives, Shortliffe (2005) implies that one of the leadership roles/relationships is provision of rules such as “privacy, security, and data transmission”. All of these roles can be interpreted as belonging to the control aspect of leadership defined in the theory (i.e., to provide consistency), although they were not specifically raised in the case study.

Miller and Miller (2007) describe lessons learned from a failed Health Information Exchange (HIE) implementation. They propose that a mandate from state payers or government agencies can “shift the burden to regional market participants”. This then helps innovation development where value creation has not been successful in these regional or local levels. Similarly, in my study, using a mandate, where value creation had not been successful, was an alternative to the duty of control at
meso-levels that could affect the innovation. However, a mandate was not significantly raised as a control relationship in the case study (only 2 instances of data). It can be said that the theory confirmed the literature about control relationships and suggested other potential sources of control, other than a mandate, such as political behaviours, and fitting the innovation into the big picture of HIT initiatives.

The fourth relationship is:

Leadership supports innovation. People need to indicate their support and facilitate binding; high level decision makers should reach consensus; users should take risks, put change first (rather than the tool), and coordinate change.

A significant literature promotes providing leadership support as affecting adoption (Cherry, Carter, Owen, & Lockhart, 2008; Ingebrigtsen et al., 2014). A systematic review of literature about the concept of support describes it as solid backing that demonstrates ownership, gives the change clear priority, allocates enough resources, and spends time with teams (Ingebrigtsen et al., 2014). Tolerating failure is another example of support from leaders (Krause, 2004). These relationships are similar to what I termed supporting change plus governance of resources (allocate sufficient resources). Therefore, the findings confirm the impact of leadership support and governance on innovation. Furthermore, leaders’ engagement with follow-up activities is associated with adoption (Ingebrigtsen et al., 2014). These activities are described as ensuring users’ involvement, providing feedback about performance, or assisting in removal of barriers. It can be seen that these relationships are also similar to the concept in the theory of indicating support and binding. Hence, the evidence from the literature also confirmed another connection between leadership and innovation development.

A study of an integrated health system built in the US to solve problems of quality by bringing patients into the healthcare process and lowering costs (Paulus et al., 2008) found that if clinical leaders worked with change programme teams and champions, it supported the change. Another finding was that leaders should tolerate baseline failure that was a sign of innovation happening. These points can also be compared with what I interpreted as supporting change. Szydlowski and Smith (2009) also mention that for HIT implementations, clinical time needs to be balanced with training. Training for clinicians is suggested even before the new IT tool is introduced, to improve their computer skills. This point about supporting individuals was not raised in the current study. Similarly, in a study by Bhandari et al. (2011), providing technical infrastructure and training for using the technology enabled others to act. Modelling the way was also defined as training and testing for new processes. These two behaviours are rooted in an individualistic view of leading others and did not match the social view of
leadership taken in my study. Thus these behaviours did not emerge in my findings. Another reason is that, in my case study, processes that included technical development and training of the new tool were part of evolving the process of innovation development (rather than leadership). This was due to the specific characteristic of this innovation i.e., co-design of the innovation with users’ contribution, rather than introducing a new product or process and training users.

In his framework for innovation promotion, Jain (2014) discusses the role of “social capital” that can be found in social connections within networks of people. Social capital is claimed to affect idea generation and communication (i.e., sharing) of that idea within organisational networks. It should be noted that examining networks of people and their position in leading change in organisations is the focus of an entitative group of relational leadership studies, as described by Cunliffe & Eriksen (2011), and was not the case for this study. However, findings of this study led me to another meta-theory in literature (as follows), that can be compared with the substantive theory emerged.

Nahapiet and Ghoshal (1998) elaborate the concept of “social capital” to provide a theory of its development in organisations. Their theory is concerned with the impact of relationships on actions (Nahapiet & Ghoshal, 1998). They explain it as capital that can be collectively gained and owned through organisational interactions. There are three dimensions of capital: structural, relational and cognitive. Structural capital exists in the patterns of connections that are generated by being tied to other members of a social network (Nahapiet & Ghoshal, 1998). The relational capital is what people gain by their history of interactions with other members such as bonds, friendship, and trust. The last dimension, cognitive, is about shared meanings, representations and language that are formed in networks (Nahapiet & Ghoshal, 1998).

The theory emerged can be compared against the social capital theory in the following way. The study indicated that support relationships was an area lacking in the leadership of this innovation. This gap could be addressed by having coordinators (see section 7.2.2.4), for instance, who improved interactions happening through the new IT system between care providers involved with care of a patient, within different care settings. In accordance with the social capital theory, in this initiative there was structural capital or technological infrastructure required for these organisations to connect and make a new social network (shared care team). They also had cognitive capital as they belonged to the healthcare system and worked in the field of CCM. However, the relational capital was the weakest resource available, as the participants complained about lack of binding between members at different organisations. Therefore, coordinators that interacted with multiple actors in this weakly related social team could strengthen the relational capital aspect and provide the initial resource for generating a feeling of binding and trust. Therefore, the theory confirmed the literature and provided
insight for future practice by describing the relational role of coordinators. These coordinators stimulate and glue the social interactions together to realise the social benefits/assets of these networks. In fact, by taking such relational roles people would contribute to leadership (via support relationships) and affect idea generation and communication of that idea (as stated by Jain (2014)).

As another example of support relationship impact on innovations, Jain (2014) mentions that leaders should support new ideas and not be afraid of risks. He also claims that leaders need to provide a culture of innovation in organisation in a planned way (Jain, 2014). The culture of innovation is open to ideas, allows free flow of information, promotes collaboration and team working, recognises work, and rewards fairly (Jain, 2014). However, I found that the evolving and emergence characteristic of innovation development could run counter to a planned way of leadership. My research found that this culture can form as part of providing support and binding in organisation that allows people to take risks and follow their own ways of creativity, while feeling bound to other people within the innovation by receiving a flow of information. The last two characteristics of transformational leaders, investigated by Jain, are individual consideration and intellectual stimulation. Individual consideration can be interpreted as part of support and binding relationships. However, what is described as intellectual stimulation for creativity and questioning the status quo was not highly raised in my findings. This could be because the idea generation was not investigated fully in this study, as this stage happened before the commencement of the programme and not everyone was fully aware of it.

It can be said that the existing substantive and meta-theories in the literature confirm the impact of support and binding on innovation development. However, the theory that emerged contradicted the planned approach to providing this leadership and support. Moreover, there were points not raised in the support category, e.g., training clinicians before the innovation process and intellectual stimulation for creativity, that could be another area for further investigations in future studies.

The fifth relationship is:

Governance enables innovation. It can be done by deciding about resources.

Change and flow in funding structures in health systems are seen as an enabler or a condition for the integrated care innovation (Balasubramanian & Spurgeon, 2012), and interpreted in my theory as the link between governance (deciding about resources) and innovation. Governance of resources is also associated with adoption of HIT innovations (Ingebrigtsen et al., 2014).

There are instances of other impacts from governance on innovation that were not supported or raised in this case study, and are therefor not in the theory. Zastocki (2015) describes the role of
governance boards in healthcare reforms and innovations. She explains the finance and business aspects these boards’ functions as accountability for performance, quality and safety, and executive review. They also provide strategic direction and discuss challenges of innovation development (Zastocki, 2015). The functionalities mentioned can be compared with what I interpreted as overseeing tasks and deciding about resources. However, the highlighted link from governance to enabling innovation development was only through deciding about resources. Therefore, Zastocki’s (2015) finding about impact of other governance relationships (i.e., overseeing) is a point for further investigations in future studies. The other functionality of governance not raised in my study is what Zastocki calls “generative governance”: asking wicked questions to find alternative ways and unusual solutions (2015). Generative governance emphasises being quick and proactive in response to changes required. Studies similar to Zastocki’s (2015) have taken the complexity approach and followed Complex Adaptive Systems theory (CAS) (Kaufmann, 1993) in response to the questions of creativity (rate of innovation development). This explains why I did not see this concept in the data as, firstly, the question under study was not about creativity. Secondly, the organisations involved in the shared care programme did not indicate as being quick and responsive regarding innovation development.

It can be said, then, that the theory showed a weak connection between governance and innovation in comparison with the literature. Therefore, other impacts that might come from overseeing tasks and acting generatively (as defined by Zastocki (2015)) toward the innovation development are also points of investigation for future studies.

The sixth relationship is:

Governance is a strategy for leadership. It can be done by deciding about resources, and overseeing tasks.

Leadership of a HIT project benefits from identifying staff support actors in each setting, and making them accountable for trouble shooting and coordinating processes (Bhandari et al., 2011). This can be defined as a governance activity in my theory (i.e., overseeing tasks) in delegating responsibilities at meso-levels and to enabling leadership through control relationships. It indicates an association between governance and leadership, plus a link between leadership relationships that controls innovation development. Change in administrative work and regulations is also said to be required for integration of healthcare services (Balasubramanian & Spurgeon, 2012). This can be seen as part of the overseeing tasks of governance groups, in which goals and strategies need to be defined to help control leadership of the innovation and thus indirectly affect the innovation.
There were other aspects of governance that were raised as governance properties in the theory, however, they were not supported by many instances of data; thus they were not highlighted as a connection between governance and leadership. Looking into the relevant literature had indicated those connections would probably be lacking in the case study. For instance, as part of the leadership process, it is required to provide strategic planning for national development and implementation of HIT innovations (Leidner et al., 2010). This is an example of governance tasks that reflect leadership as well (as defined in my governance category). This is shown in Figure 8-12 as an intersection between governance and leadership. There were also four studies that claim establishing a clear formal structure for IT governance in multiple layers can be associated with successful outcomes (i.e., HIT adoption) (Ingebrigtsen et al., 2014). They also state that governance layers need to establish clear and legitimate leadership roles. Similarly, the shared care study indicated the need for levels of governance and the lack of meso-level leadership structures. Hence, as indicated by the literature, there was a lack of instances in the data confirming this connection as an important relationship between governance and leadership. Governance structures needed to provide control structures of leadership by defining roles at different levels.

The seventh relationship is:

**Leadership manipulates governance through influence and control relationships.**

It is said that defining rules and standards (such as information privacy and security) as a leadership role could guide bigger policies and change programmes in the sector (Shortliffe, 2005). This compares with the control of leadership on governance activities that emerged in the theory. It seems the influence of leadership relationships on governance structures has been under-investigated in the existing HIT studies, whereas the theory highlighted this connection.

The eighth relationship is:

**Conflicts affect leadership/innovation.**

One of the barriers mentioned for provision of integrated care is the competition between primary and secondary care (Balasubramanian & Spurgeon, 2012). There were parallels with one of the context conflicts observed in the shared care programme (i.e., business and profits), that affected both leadership and innovation development. Another example of context-specific conflicts can be interpreted in what Shortliffe (2005) describes as structural barriers to effective use of IT in health. He explains that being too focused on local problems in the fragmented health system in the US, has caused less coordination for general standards. I described a similar issue as one of the conflicts that
could come from context, as a result of being too focused on local scope of work. Therefore, the theory confirmed the literature regarding the impact of contextual conflict on leadership of HIT innovations.

Table 8-5 summarises all the connections found in this study and indicates which had been mentioned or implied in the existing literature, and which were complementing the literature. As can be seen I could not locate any literature in the area of research that explained the effect of the innovation development process and properties of innovation on leadership. Therefore, this study has complemented the literature in two ways.

- First, it revealed that HIT innovations could be a means for leadership relationships and can manipulate leadership.
- It also brings together all the existing and scattered findings regarding the interrelationships between HIT innovation, leadership and governance processes under one theory and gives meaning to those connections.

It can also be understood from this comparison with the literature that there has been less attention in studies of HIT innovations on the impact of leadership on governance relationships. Conflicts that can emerge in the context of health systems have also been under-investigated. There were examples raised in the theory that shed light on other properties of leadership and governance relationships, extending the existing evidence. On the other hand, some connections seemed to be weaker than suggested in the literature, such as the connection from governance to innovation and leadership relationships. This could be a characteristic of the case study as the theory has been built at a substantive level. Further theoretical sampling from other substantive theories in different disciplines would be required to be able to build a formal theory in the future that increases the generalisability of the theory.
Table 8-5: Comparing the connections found with the literature

<table>
<thead>
<tr>
<th></th>
<th>Leadership supports innovation</th>
<th>Leadership controls innovation</th>
<th>Leadership influences innovation</th>
<th>Leadership creates value for innovation</th>
<th>Innovation is a means for &amp; affects leadership</th>
<th>Governance enables innovation</th>
<th>Governance is a strategy for leadership</th>
<th>Leadership manipulate s governance</th>
<th>Conflicts affect leadership /innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhandari et al. (2011)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miller &amp; Miller (2007)</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spetz &amp; Keane (2009)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balasubramanian &amp; Spurgeon (2012)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Szydrowski &amp; Smith (2009)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortliffe (2005)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Leidner et al. (2010)</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Jain (2014)</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Paulus et al. (2008)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Zastocki (2015)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Ingebrigtsen et al. (2014)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ford (2009)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erkutlu &amp; Chafra (2015)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Nahapiet &amp; Ghoshal (1998)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
8.3. Discussion

The analysis of connections between categories that emerged indicated 12 significant links. These connections were the basis for formation of the theory presented in Figure 8-12, and summarised below.

It was understood that the innovation development process and leadership influence relationships manipulate each other. Leadership influences innovation development through the vision, power, and informal and formal influencers. Innovation development also causes changes in the combination of formal influencers, polishes the vision, and creates new strategies to gain a big momentum for adoption.

Innovation development is a means to create value, and value creation is a means to develop the innovation. Some stages of innovation, e.g., change preparations, as part of implementation stage, and raising awareness during engagement, create conditions for value creation. Adoption rate and complexity of the development are intertwined with work motivations and value creation. On the other hand, creating vision and internalisation of its value drive the adoption stage.

Supporting change is a condition for innovation development. Programme members have to support people to learn and refine the implementation process, give time for it to grow, communicate the improvements, think about the right change rather than the right tool, accept any outcomes from innovations and take risks. Members and adopters need to be confident and have permission to practice the new way.

Control behaviours are leadership relationships for adjusting innovation development. They are required to review goals and strategies, adjust users’ expectations to be achievable for the IT vendor, provide consistency between existing innovative initiatives, communicate with other policy makers in the sector, and establish meso-level leaders to customise the solution according to regional problems.

There is a bidirectional link between properties of innovation and influential sources of leadership. Some properties of innovation (i.e., vision and innovators) are part of the influence mechanism (an overlap between leadership and innovation). Furthermore, influential sources, including formal and informal influencers, vision, and power relations can manipulate properties of innovation.

Similarly, innovation properties contribute in value creation and then value affects the degree of change caused by innovation. In fact, the vision, perceived usefulness, its problem solving, and the change resulted participate in value creation. On the other hand, value creation can affect adoption and might reinforce the degree of change.
Although it is not highly significant, there is a bidirectional connection between governance and leadership relationships. Overseeing tasks (i.e., governance) is a way to select formal influencers; while power and authority, as influential sources, can manipulate how governance groups oversee the tasks.

Moreover, overseeing tasks (e.g., indicating accountabilities and strategies, or providing consistency among related Health-IT initiatives) is a strategy of control behaviours. Control relations (e.g., through political behaviour and powerful actors) affect the overseeing activities.

In addition, influential sources can manipulate resource allocations (i.e., governance), while deciding on resources is a strategy for influence. Regarding governance and innovation categories, it can be said that deciding on resources is a strategy for the development process.

There are also conflicting forces that come from the context of the health system, affecting both innovation and leadership processes. Context conflicts that affect innovation development include business profits that are in conflict with adoption, and changes in medico-legal rights required to enable development of the new model of work. Individual conflicts affecting innovation can be associated with ambiguity of the innovation. Moreover, users can cause conflicts if they focus only on their own area of work, rather than seeing other care providers involved.

Business conflicts of external organisations with the innovation can also affect leaders’ decisions. For instance, changes required in the health system that are outside the scope of the programme can cause conflicts. Subjectivity and wrong perceptions can cause individual conflicts that affect leadership, e.g., people may think the influence process should start from the IT aspect rather than process change.

In the integrative diagram of the theory, I leveraged the connections mentioned to a more abstract level to make the theory more comprehensible and visible. Accordingly, there are nine high level connections between the three main categories of the study. The connections mentioned are mostly been confirmed the literature. Furthermore, the theory has expanded the literature in some ways. It revealed that HIT innovations are also means for leadership, and can manipulate leadership relationships. Moreover, it indicated that we should extend our focus from individuals to the process of leadership, to see other sources of influence such as the vision, and strategies for change, as well as external influencers. It also extended the literature around value creation by emphasising the need to improve usefulness perceptions of users and internalisation of vision.

The theory indicated more properties for how leadership manipulates governance than seen in the literature. However, it showed weaker connections regarding how governance affects leadership and
innovation development. The reason for this difference in governance related findings may have been the focus of the study, which was not governance issue. Further investigation of this category could improve the theory and its generalisability.

8.4. Conclusion

In this chapter, I accomplished the final stage of GT analysis to answer the overall research question through building the Leadership of HIT innovations (LHIT) theory. The overall research question was about patterns of behaviour in leadership and development of large scale innovations in a health IT context. To answer that, I responded to the first research objective in Chapter 7, i.e., I presented categories that were found in data about social processes of leadership and innovation development in the Health-IT context. In this chapter, I replied to the second objective of the study, i.e., I indicated how the categories are connected at an abstract level, by drawing an integrative diagram.

Furthermore, in this stage I have presented the theory by describing major “statements of relationships” (Strauss & Corbin, 1998) found in the categories and subcategories emerged in the previous analyses. In addition to demonstrating the theory found in the data, I leveraged the substantive theory by comparing it with the existing literature on leadership of HIT innovations. This comparison strengthened and improved the analytical generalisability (Urquhart, 2013) of the theory for the purpose of providing a substantive theory (Strauss, 1987) of leadership of Health-IT innovations. In the next chapter, I will evaluate the theory generated and discuss the limitations and implications of the study.
CHAPTER 9. Conclusion

9.1. Final introduction

In the previous chapters, I have built the Leadership of HIT innovations (LHIT) theory that responds to the overall research question: How do patterns of behaviour in leadership and development of large scale innovations in HIT context affect each other? I conclude the thesis by summarising the main findings, evaluating the study, exploring the implications (in education, practice, and research), outlining the contribution of the research, and recommendations for future studies. The evaluation of the study will be presented in three sections: quality of the interpretive approach used; quality of the theory itself; and limitations of the scope. The next section provides a summary of the final findings.

9.2. Summary of final findings

In this section, I summarise the research findings on which the Leadership of HIT innovations (LHIT) theory was built to indicate how the theory responds to the research question. In addition, I briefly present the major connections between the emerged categories and how they confirm or extend the existing literature. At the end of each section, I also outline the practical implications of the findings. The overall research question addressed in the study was:

- How do patterns of behaviour in leadership and development of large scale innovations in HIT context affect each other?

The GT approach taken in the analysis of data allowed me to find one core category in the problem area, called “intervening in the health system”. In the early stages of investigations, the concepts were low level and mostly descriptive of participants’ concerns about the innovation, including adoption of the IT tool and the idea of shared care among clinicians. Later, categorisation of analytical concepts into abstract levels led to seeing beyond these concerns to the realisation that the main social issue in this case was intervening in the health system.

9.2.1. Intervening in health system

In the HIT programme under study, the core category, indicating the main behavioural pattern relevant to the research question, was about intervening in the health system. Introducing a new idea and going through its development process—innovation—was tightly coupled with relationships required to lead and govern this initiative. These processes and interactions together interrupted current healthcare processes to solve a problem (i.e., CCM), and tried to bring about changes in the
behaviour of those involved with care of patients with chronic conditions. People needed to respond to the ensuing change to workflows, resources, and regulations brought by the innovation. These characteristics comprise features of an intervention. The intervention in this case happened in the context of a health system. The study indicated that the health system context and individuals interacting within this context could be sources of conflict in the HIT intervention. Therefore, in addition to contextual conflicts, intervening in the health system included three major social processes: a HIT innovation, its leadership relationships, and governance.

**HIT innovation**

In this HIT innovation, people discussed properties of the innovation, its development process, and the type of innovation. Properties of the innovation included newness, bringing change, problem solving, having a vision that could add values, being conducted by innovators, and cost. Development of the innovation seemed to happen through overlapping stages of idea generation, development (of the idea), engagement, implementation, and adoption (similar to the stages found by Baregheh et al. (2009)). The development process had specific characteristics that affected the process such as complexity, co-construction, and evolving and emerging. The innovation in this study was a combination of a product innovation (the IT tool), a process innovation (the shared model of care), and a service innovation (the new service for patients with CC).

After emergence of the major categories (i.e., HIT innovation, leadership, and governance), it appeared that the innovation’s properties and its development process were highly connected to the other categories—leadership and governance relationships. However, the type of innovation did not play a critical role in the patterns of behaviour seen in the intervening of this HIT system. This is supported by Damanpour’s (1991) statement that it is not necessary to distinguish between types of innovation in theories of organisational innovation, because eventually people adopt both product and process innovations. A summary of the two important subcategories of the innovation’s properties, and its development process, is provided below.

1) **Innovation properties:**

Regarding newness of the innovation, there were discussions and misconceptions that indicated the importance of changing people’s mind-sets, where necessary, to enable a clear grasp of the new idea. The degree of change in the programme was considered differently according to the different perspectives of participants, but it was an important property overall. Other contributing factors in the change were key individuals (such as champions), awareness about the reason for change, and the emergent-unknown aspect of change.
The point emerged about the vision of this innovation was that the vision statement did not necessarily translate into value from the users’ perspectives. The vision defined for the shared care programme was discussed by different participants in various ways to convey different values.

This innovation and basically the whole issue of intervening in the health system aimed to solve a problem. It was understood from the data that one of the leadership related requirements for this innovation was to bring awareness about the problem and indicate the need and urgency for change.

Innovators in this study could be seen as those involved in any stage of the development of the innovation. They included IT tool developers, clinical/administrative users involved in development of the new model of care or the new service for patients, clinical champions (formal promoters, users and leaders), and programme members involved in implementation or management activities to develop the new model of care.

Finally, it was understood there were costs associated with development of a new idea that needed to be accepted by users and decision makers. Outcomes proving or discounting the workability of the innovation would take time to appear, and so risk taking and support from the leadership perspective was required to facilitate innovation development.

Practical Implications:

When the new idea requires radical change to the model of work, it is important to put effort into changing people’s mind-sets to enable them to grasp the idea of innovation. The change that the innovation is intended to bring can be seen as gradual improvements, even if it is going to be large scale by the end. Awareness of the reason for change is important, as is acceptance of the unknown aspects of it. After defining a vision for the innovation, it is important to go through the process of understanding values that the vision can provide in the eyes of users. This was a feature of leadership relationships emerged that can change properties of an innovation. Hence, these properties should not be seen as fixed and predetermined, as they can be manipulated by leadership interactions. In this case study, innovators were defined broadly as anyone participating in various stages of innovation development, including users. The relationships that emerged as important leadership interactions will be discussed later, to see how these groups of innovators could be led.

2) Innovation development process:

For stages of innovation development, people mostly talked about issues around adoption, development of the idea, and implementation. In the first round of interviews, particularly, adoption emerged as a big category, as distinct from other innovation development stages, indicating the
density of concerns about it. Engagement (commercialisation), on the other hand, appeared as a less important stage, perhaps indicating fewer tensions in this stage. For instance, the alliance of stakeholders could have positively impacted the engagement stage, as it divided the cost and responsibility of commercialisation of the product for the vendor. Moreover, the contract between the DHBs and the vendor showed the potential willingness of the customer. Hence, it was viable for the vendor to accept the cost of design of the IT tool and focus on it. This model of product innovation development is called a producer model (Baldwin & von Hippel, 2011) and was found in the observations as part of the hybrid model of innovation development in this case.

In comparison, idea development was a more challenging stage, in which shared care concepts needed to be explicitly defined and developed into real processes. Here the process innovation and the product aspects needed to be developed in an intertwined way. The difficulty of this stage was in the three behavioural relationships that needed to be performed closely (interwoven). One was communicating with various groups and organisations and learning from their experiences. Next, the IT vendor’s team needed to design the tool based on users’ feedback, interoperability requirements, and other expectations emerged. The third relationship required was networking to inform/train potential users of the idea and how it had been developed, and also to gain support from groups or organisations that could affect the development process. Process innovation was developed in an “open-collaborative” model (defined by Baldwin and von Hippel (2011)) due to participation of users in the idea development (i.e. co-construction). This process added to the challenge while the product was under a producer model of development (Baldwin & von Hippel, 2011). The new model of care was being developed in an open-collaborative model. Clinicians and administrative staff actually using the innovation had volunteered to contribute in the definition of what shared care should look like. Hence, great effort was needed to manage and lead these two different models of development, as will be discussed in leadership relationships.

The adoption stage for this study refers to adoption of the innovation (its new tool, new model of care and new service for patients) by health care providers and changing their behaviour. Patients and their experience with the innovation were not a focus of my study. Given that, there were three types of individual, social and technical adoption issues. Interestingly, technical issues ranked as the least important concern, although people talked a lot about the IT tool. Individual issues were rooted in individuals’ perceptions including usefulness, usability, adoption-use preferences, cost perceptions, IT capability, previous experience, testing, reliability, compatibility, and willingness to change. The interesting point was that apart from usability, usefulness and other familiar adoption factors (Backer et al., 1986; Davis, 1989; Venkatesh et al., 2003), clinicians were thinking about adoption-use
preferences. It meant the decision about using the innovation was based on their work priorities at the time which might negatively affect their use of the innovation, even though they considered it useful and easy-to-use. This factor can be seen as a use factor, as defined by Lin (2003).

The next type of adoption concern—social issues—were issues emerged from the relational perspective raised from the collective acts of people. These social issues included organisational capacity and opportunity to change, engagement, funding, training and promoting, buy-in by authorities, durability of the programme, and social pressure. Funding, training, buy-in authorities, and social pressure can be found in the existing literature (Kuan & Chau, 2001; Venkatesh et al., 2003).

My study complemented what Lin (2003) explains as the impact of discontinuation of technology on the adopters. The theory built indicated that durability of the innovation was another factor that people might consider even before adoption. It was also understood from my study that engagement stage and activities to get people to listen to the new idea could affect adoption. Different strategies were suggested from this case study such as creating a sense of ownership of the initiative in clinicians, rather than feeling pushed by an IT project from outside.

The implementation stage was mostly about change management. It included activities for change preparation (such as destabilising relationships, testing change, and knowing local requirements), implementation tactics (such as starting from core processes, more common features, or from existing networks), balancing (dividing the work into manageable bits, reviewing emerging conditions and revising estimations to more closely fit the reality), meso-level management (finding a place for the innovation in the current structure and anchoring it in existing processes or services), and goal tracking.

All the discussions from the observations and interviews about the innovation development process reflected its three major characteristics: complexity, co-construction (co-design), and evolving and emerging. The programme documents analysed also showed that the idea of shared care was changing and evolving, even through the later stages. Complexity is a common characteristic in the literature of innovation development (Damanpour, 1991; Damanpour, 1996). Furthermore, following an Action-Research method (as in the shared care programme) aligns with complexity theory, as described by Phelps and Hase (2002).

It should be noted that, the study extended the existing literature by explaining the effects of the innovation development process and properties of innovation on leadership. The connection that emerged from the theory indicated HIT innovations as a means for leadership relationships and that
they can manipulate leadership. The effects of leadership on innovation development, on the other hand, have been covered in other studies, as described in the following section (section 9.3.1.2).

Practical implications:

It can be said that in a hybrid model of innovation development (in this case a producer model with an open-collaborative model), some stages of development are smoother and some require more organising activities. The clash of these two models in the idea development stage occurred when both the process and the product innovation were being developed in an intertwined way. This was seen as the most important place for organising relationships, described in this study as leadership relationships.

The other highlighted effect of the collective act of leadership on these development stages was people’s influence on individual and social issues of adoption. Later I will discuss which leadership relationships and how they can affect the development stages of HIT innovations.

Leadership relationships

The four main relationships that collectively contributed in leadership of this case study were influence, control, value creation and supporting change. A summary of their meanings and effect on other categories of innovation and governance follows.

1) Influence:

Sources of influence in an innovation development might be formal/informal individuals, external organisations, vision, strategies, and power/authority. The vision is a property of innovation and can be the first mobilising point to bring people into an unpredictable process of change. However, it was understood from the case that the vision needs to be followed by a clear strategy, to create a big momentum from an initial small number of adopters and take the adoption to the next level. Therefore, strategies were another source of influence on innovations. Finding strategies that increase interactions with adopters might be helpful in increasing rate of adoption and creating momentum. These strategies also need to be compatible with existing regional/local healthcare strategies.

Power and authority influenced the innovation in different ways. Individuals in authority positions could encourage people to participate in the change; people who got involved needed to change their current model of power relations in the new model of work; and there were power imbalances among stakeholders that affected the influential decisions. Because of this power imbalance, having various stakeholders in different decision making groups was required to allow interactions between them.
The association of power with influence is also supported in the literature (Bolden, 2011; Hertzfeld, 2007; Krause, 2004).

Formal/informal individuals also contributed in influence relations. Formal groups of leaders and managers used their networks to help the initiative succeed. Clinical champions were also selected from among influential clinicians interested in the innovation, who could use their internal insight for promotion and development of the innovation. However, the formal members had limited engagement with the initiative. Other influence came from informal leaders who adopted the innovation and tried to affect their peers, or even participated as innovators. They were involved in different layers and had their own network of influence, either as a health professional or someone who had both clinical and technical insight into the innovation. It seemed that the influence of individuals was important, especially at the meso and micro levels, where a strategy for implementation was not yet established.

Although most existing studies have focused on individuals’ traits and behaviour as a source of influence (Avolio et al., 1991; B. M. Bass, 1999; Harris et al., 2014; Stone et al., 2003), Kraus (2004) argues that delegating power and participatory leadership is more influential in innovation developments. This is in congruent with my findings and the relational view of leadership taken in my study.

External organisation or groups also influenced the direction of the programme. This influence could be in the form of regional/national Health-IT strategies and plans, definition of new healthcare roles, and funding of the programme. The main point was that different levels of influence were needed in local, regional and strategic levels to transfer leadership influence between layers. Otherwise, the progress was very individual-dependent and might be disrupted if an influential manager left.

In summary, formal and informal influencers, vision and power are referenced in the literature of HIT innovations as influential sources of leadership (Balasubramanian & Spurgeon, 2012; Bolden, 2011; Ingebrigtsen et al., 2014; Lapointe & Rivard, 2007; Spetz & Keane, 2009). This study has extended the existing knowledge to consider other sources of influence such as strategies and external organisations.

Practical implications:

To start the flow of influence, the vision needs to be translated into a strategy that enables a big momentum to grow from the first group of adopters. There should be places for interaction among groups of stakeholders to take advantage of all sources of power and use the resulting force to direct the initiative. Both formal and informal influencers contribute in leadership by affecting their network
of peers and participating in development of the innovative idea. There should be levels of influence from strategic, to meso and micro levels to allow flow of influence in different directions. Collaborating with external organisations should also be considered in response to emerging requirements such as defining new roles, or compatibility with regional/national strategies.

2) Control

The meaning of control that emerged as a form of leadership act was about structuring interactions and behavioural pattern among groups involved in the innovation development, rather than telling them what to do. It included relationships that provided consistency within the initiative or helped fit it within the big picture. The study indicated the importance of central control coming from high executive levels in the health system and presenting a joint message for all HIT initiatives to indicate how they should contribute in the provision of the New Zealand Health Strategy, as the basis for their overarching strategy. Consistency within the initiative was also required, in provision of meso-level (DHBs) and high level strategies congruent with the overall vision.

Controlling relationships were seen to form as a result of strategy development. It should be noted that defining strategies (especially at higher levels) emerged as a property of governance (overseeing). In control relationships, people were entering into controlling behaviours by implementing those strategies in their work. Hence, not only could the strategies influence adoption rate, they could also structure behaviours and actions to be congruent with national and regional strategies. It was understood that in such complex innovation development processes it might not be easy to define one simple goal, and measure success against it. Hence, it was helpful to simplify the vision and make regional (meso-level) strategies-goals that could be transferred to others, and reduce confusions resulting from a big vision coming in on top of existing organisational strategies. In summary, similarly to influential relationships, control requires a meso-level structure to clarify new regional priorities$strategies, provide consistency among current projects, and to create a sense of ownership.

Control could also be seen in the decision making models. The power of authorities was seen as a factor affecting decision making and even in forming a collaborative model for it. Co-design, an important characteristic of this innovation development process, seemed to facilitate application of a collaborative model of decision making, as users at any level could contribute in development of the new model of care. Political behaviour was another form of control seen in hidden tensions among stakeholders competing over interests; or when negotiation and cooperation with powerful external organisations was required.
The existing leadership literature refers to control mostly as a managerial task. For instance, control is seen in: the amount of freedom people are given to decide the way they carry out their work within their area of responsibility (Bechtel, 1993); the ability to control a system (Rotter, 1954); instructing people, monitoring and evaluating situations; and using rewards and punishments to change behaviours (House & Howell, 1992; Pavlovskaja & Kuzmina-Merlino, 2013). On the other hand, some studies define control more closely to the sense of it found in my study. In innovation development especially, innovation cannot be controlled (Stacey, 1992) but it can be directed through a long-term vision, strategies (Larson & Park, 2014), and independent decision making processes (Horwitz & Currie, 2007; Larson & Park, 2014). I interpreted this type of control as leadership control in innovation development. The literature of HIT innovations has also referred to this type of control in the form of providing consistency, decision making models, and strategy setting (Leidner et al., 2010; Paulus et al., 2008). Accordingly, the theory developed added political behaviours as another dimension of control in HIT initiatives.

**Practical implication:**

To implement control in HIT initiatives, there needs to be a central strategy based on the overarching strategy of the health system. If the innovations’ strategy is congruent with the central strategy it then becomes the first instance of control in the movement. Controlling relationships are extended when a meso-level strategy, consistent with the overall strategy, is established and clarified against the existing priorities. Authorities in power who are selected to participate in decision making procedures can also control relationships. Facilitating a collaborative atmosphere in decision making can be helpful in reducing the chance of imbalances in control. However, political behaviour can still affect the results. In the micro levels, control might be more of a coordinating role that helps actors find their new structure of work.

3) **Value creation**

Another group of leadership relationships that emerged in the study were labelled as value creation. They resulted from creating vision, communicating reason and urgency for change, providing work motivations and improving usefulness perceptions (of the vision). The existing leadership literature provides many examples of the need for creating vision, communicating it, and using financial incentives to create value (Bamford & Daniel, 2005; Jain, 2014; Kotter, 1995; Kramer & Crespy, 2011; Nanus, 1992). However, analysing users’ perception of usefulness has not been sufficiently recognised and highlighted as a way of creating value.
The vision of shared care was defined based on new concepts attracting attention in the health sector for radically improving quality of care. These concepts (e.g., patient-centred care), needed to be internalised by the healthcare community, to add value for them and make them part of this initiative. Doctors needed to shift their thinking and see patients as equals in care planning. Patients also needed to become aware of the advantages of this vision to help create demand and therefore create more value for clinicians to be part of it.

There were different ways seen to provide work motivations. For most of the health professional in this case study, it was important to see widespread use of the technology among their working network, so that using the innovation could become a routine part of their daily job. In addition, for others, financial rewards were important to even start thinking about taking on extra work.

Another way of creating value was to communicate the real need for change and create a sense of urgency for change. Discussing problems with the current model of work inspired people to think differently and participate in change. However, indicating the priority of using and participating in the innovation was also required to add to the value and allow people to actually use the innovation.

The vision in this programme was not built from top down approach. It came from the discussions happening in regional clinical and management forums. In addition, the vision was subject to review based on user’s perception of its usefulness in practice, and how it could add more value for them. Therefore, it was found helpful to have small scale tests to see the outcomes in the short term and also get feedback of the people involved along the way in the process of development, to realise what really created value for them.

The study indicated that leadership generates value for innovation through creating and internalising a vision, work motivations, communicating reason/urgency for change, and improving usefulness perceptions. Existing theories of HIT innovations have referred to the importance of creating a vision, communicating the reason for change, and providing motivations (Balasubramanian & Spurgeon, 2012; Bhandari et al., 2011; Ingebrigtsen et al., 2014; Leidner et al., 2010; Paulus et al., 2008; Szydlowski & Smith, 2009). Similarly, Deming (1994) states education is central in innovations to promote innovative thinking. In the current study improving usefulness perceptions of users, and internalisation of vision (Maslow, 1965), also created value for the innovation.

Practical implication:

When a vision is promoting a radical change in the model of work and relationships, it requires investment in educating people and creating general awareness about the reasons behind it and the urgency for action. It may then become internalised by some people as a transcendent need and help
create value for them to be part of it. Healthcare education and training systems, then, should be part of communicating the reason/urgency for change and high level executives in the health system should contribute in increasing general awareness.

At the time of implementation of the innovation, there should be mechanisms to understand perceptions about usefulness of the vision and how the vision can be reviewed to improve perceptions. In addition, this learning mechanism should be used to provide better work motivations based on users’ needs.

4) Supporting change

Another type of relationship contributing in leadership of this initiative was about supporting change. The meaning of support emerged differed from that seen in the literature where support is considered as a style of leadership, or the provision of training and financial support (Brailer, 2009; Chang & Johnson, 2010; House & Howell, 1992; Plowman et al., 2007). It was understood from the study that when authorities wanted to decide an implementation plan in their region, they were more successful if they started with structuring the change, rather than promoting the new IT tool. Innovators also needed to take risks by participating in this innovation process. Decision makers needed to reach consensus about their approach toward change to let it begin. From the users’ perspective, it was critical to feel and see themselves bound to the other levels of the initiative.

The ambiguity in the degree of change and unpredictable process of innovation development is a known risk for innovators. In the health context, it was felt there should be limited risky projects. However, people who took these risks supported the learning process resulting from innovations regardless of the outcome. Leaders also needed to go through defining the vision, learning from users’ perceptions and refining the goals and outcomes expected. They were taking a risk because of not being able to define expectations from the beginning.

As another supporting interaction, stakeholders with different organisational interests needed to decide and reach consensus on their approach toward change. Clear decision making procedures and a collaborative approach seemed to be more likely to drive change in this study. Furthermore, leaders needed to give time to the development process and also provide a sense of binding. People who were using the innovation needed to feel the new way of work was attached to the current structures, not a one-off experiment. This sense of binding also needed to be across teams and groups in different layers of the initiative to imply that they belonged to one movement and there was an ongoing demand for it.
As another example of support relationships, the findings indicated that leaving it for the technology to provide the communication infrastructure was not sufficient for all users in both using the IT tool, and gradually forming the new model of work. A coordinator could facilitate their interactions and help in forming their communications by being a gluing agent to stick them all together.

In summary, the study presented leadership as supporting innovation when people provide a feeling of binding and support, reach consensus about change, take risks, put change first (rather than the tool), and coordinate it. These aspects of support are confirmed by the literature (Ingebrigtsen et al., 2014; Jain, 2014; Krause, 2004; Paulus et al., 2008; Szydlowski & Smith, 2009). Properties found such as the need for a sense of binding and coordination between actors were in compliance with “relational capital” in social capital theory (Nahapiet & Ghoshal, 1998).

**Practical implication:**

To support an innovation that aims to change the model of work in the health system, leaders/decision makers should prioritise planning about change rather than just introducing an IT tool; they should accept the risks, give time to the innovation, and connect people across different layers of the initiative in such a way that they feel bound to an ongoing movement.

**Governance**

Looking into behavioural patterns in the formal governance group of the programme revealed properties of governance as social activities close to leadership. These governance behaviours included deciding about resources, overseeing tasks, and reflecting leadership. Deciding about resources and overseeing tasks were compatible with the existing definitions of hierarchy governance (as explained by Smith et al. (2012). Other aspects of governance, i.e., governance structures at different levels and reflecting leadership, added insights about governance compatible with the relational view of leadership. Similarly, to the leadership category, the findings indicated a need for governance structures at different levels to define strategies and provide advice about change management at meso/micro levels. This aspect of governance can be compared with the network model of governance, found in a study by Burns, Hambleton, and Hoggett (1994).

One of the critical decisions of governance group was about provision of resources for the initiative. In the New Zealand health context, the limited resources available for such a complex programme made this job more challenging. The decisions were about responsibilities and who would receive the funding/resources. It was implied from the conversations that accountabilities were not clearly discussed, especially in the meso levels. Furthermore, as funding was not allocated for clinical users, a sense of ownership for the initiative was lacking and hence there was a lack of accountability. Apart
from indicating accountabilities, and delegating authorities, governance needed to define high level strategies and objectives, and provide professional advice on the innovation and its implementation strategy.

It was apparent that people had overlapping roles or interactions that could be seen as both governance and leadership. They could influence each other or control the direction of discussions, while they were deciding about resources. Governance groups could similarly reflect leadership relationships, such as in supporting change.

Looking into connections between categories in this study indicated that governance was a strategy for leadership. The literature also supports this connection as being applied through deciding about resources, and overseeing tasks (Balasubramanian & Spurgeon, 2012; Bhandari et al., 2011; Ingebrigtsen et al., 2014; Leidner et al., 2010). However, it seems that the effect of leadership on governance (via influence and control relationships) has been less addressed in existing HIT theories.

Practical implication:

The most important governance activity is seen as defining strategies and giving advice about its implementation. It is a prerequisite for control relationships (as part of leadership) and it is also important to have different levels of governance to translate high level strategies to lower levels, oversee implementations and allocate resources. Governance groups need to delegate authorities and clarify accountabilities to be able to oversee tasks in their region.

Conflicts of health system

The study indicated that a smaller category that comprised conflicts in this HIT initiative was worth conceptualising, for consideration in similar situations. These conflicts were either rooted in individual’s perceptions, or in the context of the health system. Individuals might have perceptions of their role that were in conflict with expectations in the innovation process. For instance, users might only see themselves as adopters of an idea/tool, whereas they were supposed to be participating in development of the idea. Subjectivity in understanding users’ experience, and in interpretation of the outcomes of the process/service innovation, also appeared as another source of conflict.

Business profit was also a context specific factor causing conflicts. IT organisations that were supposed to collaborate with the vendor might not have seen their best interests in doing so; and leaders of the initiative who came from various organisations might have seen issues conflicting with their organisational profit. Users of the innovation might also have found their scope of work in conflict with features of the innovation, if they were only focusing on their own work/benefits.
The aforementioned conflicts affecting HIT innovation development and its leadership have also been mentioned in existing theories (Balasubramanian & Spurgeon, 2012; Shortliffe, 2005).

Practical implication:

As found in Chapter 6, there were inevitable cracks in the innovation in the form of issues that emerged and affected the innovation development process, including a variety of assumptions and disagreements on the change process. It seems that a leadership role is to prevent these becoming big conflicts. Individuals’ perceptions and understanding of the value of the innovation are important factors in conflicts. The effect of external organisations and their business conflicts, that can become barriers to implementation of the innovation in the health system, also needs to be considered.

Moving from the summary of findings in the Leadership of HIT innovations (LHIT) theory, I present my evaluation of the study in the following section.

9.3. Evaluating the study

In this section, I provide an evaluation of the quality of the interpretive approach used in the study, the quality of the theory, and limitations in the scope of the study.

In discussing evaluation of interpretive research, the basic criteria commonly used in positivist paradigms are not appropriate. As Goulding (2002) elaborates it is not uncommon to see qualitative research being validated according to quasi-positivistic criteria. A positivist paradigm still dominates many disciplines, including IS and management. Therefore, applying parallel criteria to positivism such as credibility (instead of internal validity), transferability (instead of external validity), dependability (instead of reliability) and confirmability (instead of objectivity) is not appropriate for constructionist studies (Goulding, 2002; Guba & Lincoln, 1994). These parallel measures are still semi-positivist and do not apply to GT and constructionist studies, such as mine. Given that, as an interpretive researcher and a PhD student whose thesis is going to be assessed, I need to be reflective regarding my own work and justify the quality of the research. Klein & Myers (1999) provide principles by which interpretive researchers can respond to these concerns without needing to adjust to the positivist criteria. These principles have been important in the move toward generating standards for evaluation of interpretive studies (Myers, 2013; Urquhart, 1999). In addition, I apply seven criteria provided by Strauss and Corbin (1990) to evaluate the theory itself, because they pose useful questions to evaluate how well a theory is grounded in data.
9.3.1. Quality of the interpretive approach

In order to evaluate the interpretive approach taken in this study, I use Klein & Myers’s (1999) seven principles for evaluating interpretive research. It should be noted that the hermeneutic nature of this study is in its data analysis which was “the interpretation of spoken texts and subsequent reinterpretation of those texts” (Urquhart, 1999, p. 203). Therefore, this study has applied hermeneutics at the methods level rather than as its theoretical philosophy (i.e., constructionist interpretivist).

1. **Principle of the hermeneutic circle**

This principle refers to the formation of knowledge and understanding by iterating between the meaning of parts of a phenomenon and the whole entity. There should be a back and forth movement, between detail and the whole, to build theory (Klein & Myers, 1999).

The coding procedure applied based on GT also followed this cyclical movement between the parts and the whole of the data. Accordingly, open coding was conducted on each small part of data (word, sentence, or paragraph), these codes were grouped in selective codes, and then categorised into more abstract levels based on their general themes. This process was iterative. I was constantly refining the categories and moving coded texts around based on new insights and thinking around meanings of the codes and categories.

In addition, the other sources of data collected, the observations and the programme’s documents, provided great sources of learning for the bigger picture of the programme and its context. The inferences made in the first two sets of data collection and analysis then made me think about these issues, along with analysis of each new instance of data in the next stages.

Finally, I was still reaching new understanding of the categories and their properties even in the late stages of analysis. Writing theoretical memos about what I thought during different stages was a way of tracking this evolving thought process. Even while writing the integrative chapter of findings (Chapter 6) to try to build the theory, I was gaining new insights by reviewing all the findings and I adjusted a few concepts (mostly selective codes), so that the meaning of the subcategories could emerge in the best way. This is another place where the interactions between parts and whole of data were evident in this theory building process.

2. **Contextualisation**

This principle highlights the need to indicate the “social and historical background of the research setting” (Klein & Myers, 1999, p. 72). In this interpretive study, a case study was used to investigate
subjects and their meaning in the context (as described by Myers (2013)) of a shared care programme introduced through a HIT innovation into the New Zealand health system. The design of data collection methods enabled collecting enough data about the context of the shared care programme, before getting into individual interview sessions (i.e., through observations and document analysis). This context included getting to know the organisations involved and their frame of reference in the programme, and the New Zealand Health system and its impact on the relationships between stakeholders of the programme.

It should be noted that, the focus for context was based on the individuals’ interpretation of the historical context of the shared care programme. The contextualisation then was limited to the organisational and individual involvement with the programme, rather than the historical context of HIT innovations in New Zealand.

3- Interactions between the researcher and the subjects

This principle suggests critically reflecting on the process by which data is socially constructed between the researcher and participants (Klein & Myers, 1999), in considering the possibility that participants change their views as a result of their interactions with the researcher (Urquhart, 1999). In this study, my impression was that participants showed little change in their thoughts that could be associated with their relationship with me. Evidence of their strong opinions was reflected in the observations (i.e., before starting interviews). It is still not easy, though, to be sure about the impact of my engagement in the programme (being in the evaluation team). Some people chose to not participate in the interviews and their non-participation may have been related to my engagement. However, due to multiple sources of data collection it is possible to consider this effect as non-critical in the final interpretations. The extensive explanation of the data analysis process and emergence of findings would also indicate any role my interpretations have played in the theory building process, even if it is not explicitly mentioned. For instance, having a long period of engagement with participants allowed me to recognise the differences in participants’ statement of support. In one place, I interpreted it as existing organisational support that affected adoption, while in others I considered it a leadership relationship that supported change.

4- Abstraction and generalisation

Abstraction and generalisation is what interpretive researchers are attempting to do as they follow principles of contextualisation, and go through the hermeneutic circle (Klein & Myers, 1999; Urquhart, 1999). It should be noted that Glaser and Holton (2004) objected to generalisation concerns in the GT literature, believing that it is always possible to compare emergent concepts in a substantive theory
of GT to find implications for other substantive areas. Their point is to emphasise the emergence of context-specific concepts in a new area of study, rather than considering the theory as a generalised pattern of behaviour.

Given that, it is still appropriate to think about generalisation in case studies, as Walshman (1995) describes. This generalisation was realised in four ways (Walsham, 1995): concept development, theory generation, the drawing of specific implications and the contribution to rich insight. Open codes were developed into more abstract levels using GT techniques; the more abstract the concepts, the more theoretical the constructs emerging. The level of abstraction makes the theory flexible for multiple situations, as suggested by Glaser and Strauss (1967). At the core category level, it can be seen how leadership and the HIT innovation development processes were interconnected. The emerging categories were also compared against the existing literature to sensitise thinking for theory building along the way (Glaser, 1978). In addition, the emergent substantive theory was compared with the HIT literature to make the theory more generalisable. This process provided a theory that can be adjusted and reformulated for applying in other contexts (as explained by Glaser and Strauss (1967)).

5- Dialogical reasoning

This principle refers to the sensitivity that should exist in interpretive research to potential contradictions between theoretical preconceptions and actual findings (Klein & Myers, 1999). It requires the researcher to make the theoretical assumptions that have guided the research design transparent to the reader (Klein & Myers, 1999). In this thesis, my theoretical perspective did not become clear until the preliminary non-committal review of literature on leadership of change. It became apparent that the preferred lens for studying leadership was to use a relational view of leadership, rooted in constructionist interpretive philosophy. Hence, it can be seen in the data collection and analysis that any leadership related codes or concepts were developed based on this assumption. Leadership was not about individual behaviours or characteristics, but rather relationships that formed during development of the shared care innovation.

The hermeneutic nature of this study takes into account bias at the starting point of understanding (Klein & Myers, 1999). In fact, I tried to be aware of my prejudices as the researcher and suspend them when analysing the texts, to allow understanding of the meaning behind them. For instance, at the beginning of the research I considered adoption and behavioural change as an important subcategory that stood distinct from the innovation’s properties and its development stages. This reflected my bias in seeing adoption as an important concept, based on work for my Master’s thesis. Later, it became
apparent that the adoption concept was part of the innovation development process and should not be considered separately. Learning more about the categories emerging allowed me to get through my presumptions and find the best form of the constructs. This required many iterations to refine the core category and its subcategories (i.e., different categorisation of codes in Nvivo). The last step of dialogical reasoning was comparing the literature with the theory (Chapter 8) to indicate the contribution of the theory to the existing knowledge base.

6- **Multiple interpretations**

Sensitivity was required to multiple interpretations by participants of the same story. This principle recognises the influence of context on people’s actions, by looking into the reasons behind the various views (Klein & Myers, 1999). Examining the reason behind these different viewpoints can reveal conflicts (e.g., power or financial conflicts). From the early stages of this study it was understood that there was a variety of perceptions about the main concepts of the innovation (i.e., integrated care and patient-centred care). This issue was followed in further data collections and eventually contributed in emergence of individual and context conflicts in the theory. Other differences were also seen in participants’ explanations of the degree of change happening, or leadership problems in the programme. However, I attempted to follow the conceptualisation techniques in GT and make abstract concepts of those viewpoints that included these variations as dimensions of the concept.

7- **Suspicion**

The principle of suspicion refers to the need for sensitivity regarding potential biases and systematic distortions in participants’ stories (Klein & Myers, 1999). It recommends not considering participants’ statements as fact. I fulfilled this principle by not relying only on individual interviews and their statements of issues in the shared care programme, and also comparing statements with other instances of data collected during observations and document analysis. In addition, as for the principle of multiple perceptions, the data collection was performed in a way that covered different stakeholders’ viewpoints including clinicians, IT developers, governance agents, and formal and informal leaders. Moreover, I used convergent interviewing, by which people reflected on their agreements or disagreements about the main issues of the innovation development. This process also contributed in understanding distortions and biases in the stories. Then, using the constant comparison technique of GT allowed me to form analytical concepts that contained these viewpoints under a more abstract label to reveal the truth.

In summary, the seven criteria applied indicate that the interpretive approach used in the thesis has fulfilled the quality requirements to a large extent.
9.3.2. Quality of the theory

In this section, I evaluate the quality of the theory in discussing how well it indicates the interrelationships between innovation and leadership. As Bryant & Charmaz (2007) state, validity in grounded theory is defined and supported by “the extent to which a theory is well-grounded empirically and conceptually” (p. 19). Hence, it seems appropriate to reflect on the seven criteria provided by Strauss and Corbin (1990) to help evaluate this grounded theory study. I also explain those parts of the criteria that are not in compliance with my theoretical perspective of GT.

Criterion 1: Are concepts generated?

This criterion was met completely in this study as all the concepts were developed from data and grounded in it. There was no preconceived framework that imposed concepts onto the theory.

Criterion 2: Are the concepts systematically related?

It can be seen from the development of findings that open codes were systematically developed into analytical codes (selective codes) and then related by categorising them into more abstract levels. The relationship developed between concepts can be tracked by looking at the levels of conceptualisation explained in the findings chapters.

Criterion 3: Are there many conceptual linkages and are the categories well developed? Do they have conceptual density?

This criterion refers to the importance of having many instances of data linking categories and subcategories together, in addition to categories that are theoretically dense by having enough properties. Following open coding and selective coding procedures, codes with many instances were formed into higher level properties and dimensions. In addition, Glaser’s meaning of density can be seen as relating to the notion of parsimony (Lehmann, 2001, p. 63). Urquhart (2013) elaborates that parsimony and comprehensiveness can be obtained in GT research in two ways. One is through theoretical sampling that provides direction for the next place for sampling, to ensure the most important aspects are covered. The other way to fulfil parsimony in GT is through theoretical saturation, by which data collection and analysis continues until the most important properties of categories are represented. Limiting the focus of the theory to one or two core categories can also contribute to parsimony (Urquhart, 2013). Therefore, applying all the techniques mentioned in this study ensured this criterion was met too.
Criterion 4: Is much variation built into the theory?

This criterion appears highly relevant to the post-positivist view of Strauss and Corbin (1990) in GT. It refers to indicating variations in theory by establishing conditions, consequences and actions related to the phenomenon. This predefined coding framework (consequences, conditions, etc.) was not used in this study as I attempted to follow Glaser's (1978) advice on developing/using the most appropriate coding to represent the meaning of connections between emerged categories.

Criterion 5: Are the broader conditions that affect the study built into its explanation?

This criterion is another example of forcing the data rather than emerging it, as in Strauss and Corbin’s approach (Glaser, 1992). It refers to the consideration of economic, social and cultural conditions in the analysis of data. This works against GT and could have imposed concepts onto my study of relationships. However, if these broader conditions affect the phenomenon under the study, there should be analytical concepts emerging from data that implicitly reflect them (Urquhart, 1999). As can be seen in the theory, contextual conflicts emerged from this data analysis procedure and indicated their impact on both HIT innovation and leadership relationships. These contextual factors emerged mostly because there were three different health districts involved with the shared care programme and people indicated their perceptions about other districts’ patterns of action regarding the innovation. Therefore, it supports consideration of contextual factors in the theory but not before they emerged in the data.

Criterion 6: Has process been taken into account?

This study looked at leadership and innovation from a processual view. The structure of the thesis reflects the process taken in the whole data collection and analysis journey. Hence, it can be said that this criterion was also met.

Criterion 7: Do the theoretical findings seem significant and to what extent?

This criterion is to ensure that GT procedures are followed in conjunction with full awareness about the requirements of the research. The researcher needs to indicate the ability to analyse, be sensitive to nuances, and convey the findings (Urquhart, 1999). In this thesis, I have tried to clearly represent the analytical procedure and how nuances in the data were interpreted to lead to the findings. I believe the significance of findings will be most verified when the results attract academic attention and debate in the area of study.
In summary, the evaluation of the theory based on the guidelines indicates that my theory exhibits quality as defined by the criteria used. The significance of the theory, though, needs to be criticised and evaluated through wider academic debate.

9.3.3. Limitations of scope

As the final step in evaluating the study, I discuss the limitations of the scope of work. The theory presented in this study will assist further studies on leadership of Health-IT innovations, in indicating how people might influence and change the outcome in a complex inter-related manner. The following limitations of the study need to be considered in any future studies:

- One of the limitations of the study was in data collection as I excluded patients and their experiences in studying the innovation development process. Patients who volunteered to participate in using the new service, and the patient portal provided for them, could be another source of data for revealing other relationships that contributed in development of the innovation or its leadership. The service innovation, then, was outside the scope of enquiry. An exploratory study on the potential of the patient portal used in the shared care programme was carried out by Letford, Humphrey, and Day (2014, November). However, a more comprehensive study is needed following provision of all the functionalities of this portal to patients.

- Another limitation was the number of interviews in this study; 32 in total. However, since there were other sources of data including observations and programme documents, and due to the fact that saturation was reached at the end and new concepts were unlikely to emerge, this level of theoretical sampling seemed appropriate for the study.

- There were also limitations of the selected interpretive stance. According to Orlikowski and Baroudi (1991), interpretivism does not consider the external conditions that give rise to meanings, and cannot indicate the unintended consequences of actions. It does not explain historical change and ignores possible social conflicts. Therefore, this study of leadership of innovations will have similar limitations (i.e. not indicating unintended consequences, historical changes, and social conflicts) in interpreting relationships observed in the case study. In addition, the interpretive perspective can apply limitations to theory building. Goulding (2002) explains other limitations of a qualitative approach for theory building that follow Grounded Theory: “theories are interpretations made from given perspectives.” Thus, it should be considered that “interpretations are temporally constrained” and so are provisional and require further investigations. They are limited in
time, meaning that they may become outdated or require qualification (Goulding, 2002, p. 43).

- Similarly, the underlying theoretical assumptions have limited the study by looking into relationships and interpretations of people, rather than individuals’ characteristics and behaviour. To extend this study, then, external conditions such as relationships outside the scope of the case (e.g., how people’s affiliation with external organisations could affect their interactions in the innovation process) could be studied further.
- The scope of the theory was also limited to the level of a substantial theory. Hence, in order to apply it to another context, the concepts need to be compared to find their implication in other substantive areas (Glaser & Holton, 2004), and merged with the contextual concepts emerging from the new phenomena.

9.4. Implications of the theory

There are implications of the theory for teaching, practice, and research. The first to discuss are the teaching implications of the theory. It is hoped that the study has reduced the fuzziness and abstract definitions existing in the literature around the relational perspective of leadership (Uhl-Bien & Ospina, 2012). This new emerging perspective can be used in academic disciplines concerned with management and leadership of change in organisations. The four subcategories of leadership relationships emerged are examples of areas in which leadership is conducted, rather than about individual characteristics or behaviour. It directs students’ attention to “the space between” individuals (Bradbury & Lichtenstein, 2000) and the interactions that can collectively contribute and produce leadership as an outcome (Uhl-Bien, 2006), and so complements the dominant teaching materials that focus on what leaders do and how we can develop more effective leaders.

In addition, the theory has practical implications for those developing a Health-IT innovation. It has highlighted how leadership can manipulate properties of the innovation, beyond defining a vision. The study has indicated the importance of understanding values that the vision can provide in the eyes of its users. It can also sensitise practitioners and broaden their views about innovators (as defined in the study). The results remind practitioners that innovation should solve a problem, and that communicating the urgency for change can be a leadership role that impacts the innovation.

The connections drawn between the innovation development and leadership categories could be helpful in innovation practices as well. It indicates the possible impacts of innovation development process on the way people lead the change (complexity and emergence of the innovation development manipulate and influence leadership process). Moreover, it reveals that vision and
innovators are properties of innovation that are part of the leadership required too. Hence, not only should we consider defining the vision as a leadership activity, we also need to take into account users, and technical, and change management teams who participate in the development of the idea as leaders. It also indicates that using a hybrid model of innovation development can reduce tensions in one stage of development (e.g., engagement) and bring challenges in another one (e.g., idea generation). The role of leadership and the importance of organising relationships are critical at the stage where two different innovation models need to be interwoven.

The theory also indicates that innovation practitioners and decision makers should think of leadership as more than creating value and influencing people. They need to find relationships that can adjust behaviours and provide supporting conditions for the innovation process too (refer to the practical implications mentioned in Control and Supporting change sections). Finally, it notes the role of leaders in preventing the cracks in the innovation, which are part of innovation development and its emergence characteristic, from becoming serious conflicts.

The last implication of the theory is in further research to provide a substantive theory in leadership of Health-IT innovations that can be compared with other contexts in future studies and become a foundation for building a formal theory. Formal theories are the most generalising theories grounded in data from multiple contexts and disciplines, to reduce the context-specific categories to make a more abstract theory. In section 9.6, I recommend further areas of research based on the comparison of my findings with literature, as steps toward a formal theory.

### 9.5. Research contribution

The research contribution can be summarised as follows:

- The study delved into relationships and interactions of people involved in an innovation development and its leadership processes, and made those relationships explicit. These relationships can be of value for HIT innovation developments in practice. One of the inter-relationships that emerged from the study and extended the existing literature indicated that HIT innovations are a means for/manipulate leadership relationships.
- The theory also reveals how innovation development, leadership and governance of the innovations are inter-related, to help predict points of weakness when intervening in a health system with HIT. It also brings all the existing and scattered interrelationships between these social processes under one theory and gives meaning to those connections.
• The research also presents what contributes in leadership if we follow a relational perspective (Cunliffe & Eriksen, 2011; Hosking et al., 1995; Uhl-Bien, 2006) and go beyond individuals’ actions and characteristics as leaders. It can be of value for educational purposes while adding clarification to abstract definitions of relational leadership in the literature (Uhl-Bien & Ospina, 2012).

• The theory presented is a substantive theory of how HIT innovations and the leadership required for them are inter-related. This provides a theoretical contribution to the existing literature as there is limited research focusing on both innovation development and leadership challenges in the health context. The categories found in the theory can be used as a base for comparison in other contexts, to see how these conceptualisations can be of use in other similar situations.

• The methodological contribution of the study is in the way grounded theory has been adapted to combine different sources of data, analyse them in detail, and build a theory grounded in the data.

9.6. Recommendations for future actions

In future studies, the theory can be tested deductively in a similar context (i.e., Health-IT innovations). This test would include verification of the categories and their relationships that emerged in this study. Furthermore, there were impacts from governance on the innovations evident in the literature, that were not raised in this case study. This may relate to the fact that governance relationships were not the original focus of the study. Therefore, another recommendation for future studies is the exploration of the governance category and its inter-relationships with HIT innovations.

The substantive theory (LHIT) can benefit future research by provision of categories to be compared, built upon and extended in further theory building studies. Given the level of generalisation in substantive theories, future studies could be conducted in disciplines other than healthcare to enable integration of different substantive theories and leverage the scope of the theory to a more abstract level. It could then result in a formal theory about leadership and innovation development inter-relationships.

9.7. Conclusion

The aim of this thesis was to provide a substantive theory of the inter-relationships between a Health-IT innovation and the leadership processes required for it. I started from a broad research problem (i.e., Health-IT change processes and their leadership problems) and conducted an exploratory
literature review to refine my research question and draw boundaries around the study. This limited review of the literature enabled me to define my theoretical perspective in studying leadership relationships. In this study, I adopted Glaserian Grounded Theory methodology, and followed a constructionist interpretive approach. I also used guidelines and tips from other grounded theorists where appropriate. The next step was to start data collection for the purpose of building a basic understanding of the context of the study. Hence, I conducted a series of observations and document analysis. These steps also provided probing questions and inferences to be validated in the next stages (i.e., interviews). I understood it was more appropriate to conduct two stages of interviews, each one focused on one concept of the research question (i.e., innovation and then leadership). Hence, I conducted convergent interviews first to find the main issues in the innovation development process based on interviewees’ consensus, and the reasons for disagreements. Later, I used the findings of the previous stages and probing questions to run in-depth interviews about leadership of this innovation development process. The analytical process for the study is depicted in Figure 7-1, in which I integrated all the previous findings with the last stage of interviews to find the core category of the thesis.

After the emergence of the core category and its three main categories (i.e., HIT innovation, leadership, and governance), I explored the connections between these categories in Chapter 8. I then built the Leadership of Health-IT innovations (LHIT) theory, presented in Figure 8-12. The theory answered the research question by indicating the inter-relationships between Health-IT innovation and leadership processes, plus the role of governance relationships in this intervention.

The theory should prove particularly valuable for health informatics researchers and practitioners. Health-IT projects are changing health systems. We cannot ignore the role of collective social interactions in leadership and development of these HIT innovations and, as such, we need to take those interactions and relationships into account in our planning.

I recommend, as the next step of this theory, a deductive test of the theory in practice by which the categories and their relationships can be verified in a similar context, i.e., another HIT innovation development. A practical test will indicate the real applicability of the theory in the existing complex environments of HIT innovation development projects. It will also verify how leaders can benefit from consideration of all the relationships that affect the direction of such projects.
Appendices

Appendix one: Interview schedules

This section provides a rough explanation of the topics of enquiry during the interviews without considering the probing questions generated throughout these data collection and analysis cycles and the questions that were raised based on the interviewees’ conversations.

*Interview schedules – the 1st stage of interviews*

Introduction: Introducing myself, re-explaining the purpose of the study and the reason for their selection. Thanking them for accepting the interview request, and asking for any questions they have about this interview. The main theme in the questions is the innovation development process.

1. The origin and changes of the innovative idea since its generation:
   *How did you get involved with this programme? What made you interested in it?*
   *What was the vision at the time of defining the basic idea?*

2. Their perspective about innovation:
   *Do you see this programme as an innovation?*
   *How do you describe the characteristics of this programme as an innovation?*

3. Key individuals/groups who influenced the innovation from its idea generation to adoption and commercialisation:
   *Which groups/organisations/individuals do you think have been more influential in defining the vision/the implementations/engaging clinicians?*

4. Individual and organisational relationships (e.g., governments, universities, competitors) that influenced or contributed to the process
   *Which external groups or organisations do you see as having impact on the programme?*

5. The context of the innovation:
   *What specific conditions in the DHBs involved have affected the programme’s direction?*

6. Leadership communications:
   *What activities have had significant impact on people’s commitment to the programme?*

Closure: turning the recorder off, thank them again, allowing them to continue talking about things they might not want to be included in the study, reflecting on their feelings about this study, and asking any questions from me.
Interview schedules – the 2nd stage of interviews

Introduction: similar to the previous stage, plus explaining what has been achieved in the first stage (showing them the seven categories in the Appendix two). The main theme in the questions is leadership relationships.

1. Their role within the programme and how they got involved with it:
   How do you describe your role in the project? How was it related to your other roles or your background?

2. Verifying the seven categories emerged in the first stage:
   By looking at these categories, how do you see their importance/contribution in the development of the shared care idea?

3. Their perception of leadership:
   What is the role of leadership in your view?
   What did you find helpful to get clinicians/organisations onboard (with the programme)?
   How did you arrange everything in your organisation to bring a new structure in place?

4. The decision making pattern in their group/organisation regarding the programme:
   How was the decision making process in your group about the programme?

5. Mobilising points in their view:
   How did you handle a situation when people around you were reluctant to change?
   What do you think about the influence of network of people around you on the new model of work?
   How was the IT tool affecting the change process?

6. Interactions between different levels of the programme:
   Tell me about your contacts with other groups/organisations inside the programme?
   How did you communicate issues raised in your group with the other teams?

7. The impact of the innovation on changing the health system:
   How do you find the impact of this innovation on the New Zealand Health system? What changes are emerging in the health system as a result of it?

Closure: similar to the previous stage.

Appendix two: The seven categories

The seven categories below emerged in the 1st stage of interviews that was used in the enquiries in the second stage.
References


Brailer, D. J. (2009). Presidential leadership and health information technology. Health Affairs (Project Hope), 28(2), w392-8. doi:10.1377/hlthaff.28.2.w392


Cook, K. E. (2008). In-depth Interview. In L. M. Given (Ed.), The sage encyclopedia of qualitative research methods (pp. 422-423)


273


Northern Region DHBs. (2009). *Progressing And Transforming Health: Regional Information Strategy 2010 to 2020: The PATH to the Future.*


Shamir, B. (2007). From passive recipients to active co-producers: Followers’ roles in the leadership process. In R. P. B. Shamir, M. Bligh & M. Uhl-Bien (Eds.), *Follower-centered perspectives on"
leadership: A tribute to the memory of James R. Meindl (pp. ix–xxxix). Greenwich, CT: Information Age Publishing.


Toth, F. (2010). Healthcare policies over the last 20 years: Reforms and counter-reforms. *Health Policy, 95*(1), 82-89. doi:10.1016/j.healthpol.2009.11.006


