

Blockchain: Uniting Aid and Trade?

A case study of the UN Women Blockchain Project to Empower Women and Girls in Humanitarian Settings

Emilie Margrethe Skogvang



Master thesis

TIK Centre for Technology, Innovation and Culture

Faculty of Social Sciences

UNIVERSITY OF OSLO

28.05.2018

Blockchain: Uniting Aid and Trade?

A case study of the UN Women Blockchain Project to Empower Women and Girls in Humanitarian Settings

Emilie Margrethe Skogvang

Supervision: Dr. Taran Mari Thune, Professor

Master thesis at TIK Centre for Technology, Innovation and Culture

Faculty of Social Sciences

UNIVERSITY OF OSLO

28.05.2018

Keywords: cross-sector collaboration, humanitarian innovation, innovation process, blockchain technology.

© Emilie Margrethe Skogvang

2018

Blockchain: Uniting Aid and Trade?

A case study of the UN Women Blockchain Project to Empower Women and Girls in Humanitarian Settings

Emilie Margrethe Skogvang

<https://duo.uio.no>

Print: Representralen, University of Oslo

Abstract

The increasing needs in the humanitarian sector and the lack of funding to address these needs have led to a paradigm shift in the sector. Humanitarian organizations are increasingly focusing on innovation and emerging technologies to meet humanitarian needs in a better and more cost-efficient way. This demands closer collaboration with the private sector, which has also been emphasized on policy level through the World Humanitarian Summit. However, prior literature has found that successful partnerships take a long time to establish, they are difficult to manage, and many of them fail. The innovation literature further claims that there is a need for collaboration between different actors in innovation processes, as innovation requires the combination of diverse sources of knowledge and capabilities. There is nevertheless little research found on collaborations between humanitarian organizations and private companies in radical, high tech innovation processes.

This thesis reports on the early phase of the UN Women Blockchain Project to Empower Women and Girls in Humanitarian Settings. This qualitative case study contributes to the literature on innovation collaboration in humanitarian settings, by describing how a collaborative relationship between UN Women and private blockchain companies emerged and developed in the early phase of a radical, high tech innovation process, and identifying factors that support and constrain collaboration. Based on these findings, the thesis discusses implications for how cross-sector collaboration in humanitarian innovation processes can be supported and managed. The thesis argues that uncertainties and ambiguities prevail the early phase of the innovation process, and that there are structural factors that support as well as constrain collaboration in the UN system. These factors need to be addressed at a system level. The thesis also argues that issues related to cultural differences, interpersonal relationships and communication difficulties must not be underestimated in the initial phase of a partnership process. Thus, the research findings strongly suggest that social factors should be accounted for and taken into consideration to ensure successful long-term partnerships.

Preface

I am truly grateful that I got the chance to do my Master's degree at the TIK Centre for Technology, Innovation and Culture at UiO. Joining the TIK master program and writing this thesis has been one of the most interesting, educating and fun experiences of my life. Thank you to all my fellow students at TIK who have made these two years unforgettable.

Firstly, I am forever grateful for my husband who have supported and encouraged me throughout this process. Thank you for always believing in me. Furthermore, a big thank you to my supervisor Taran Mari Thune who helped me along the way with her insights and knowledge about innovation processes. Thank you for guiding me in the right direction. I also need to thank Innovation Norway and NOREPS for helping me get access to important information and informants. I think it is safe to say that I could not have done this research without their help. Special thanks to my colleagues Ingvild von Krogh Strand and Elisabeth Fosseli Olsen who work on the humanitarian innovation initiatives in NOREPS. They served as excellent sparring partners on innovation issues, as well as helping me understand the humanitarian ecosystem.

I am also very grateful that UN Women let me follow their innovation project. They have been very supportive and interested in contributing to my thesis. Thank you for the good collaboration, and for taking the time for my interviews. I also want to thank the rest of my informants. I have met so many passionate and inspiring people throughout this process, and I have learned a tremendous lot from them all. I could never have done this without their time, help and inputs.

A special thank you to my friend Linnea Holter Thompson who helped proofread the text and provided helpful analytic inputs along the way, and to Martin Beyer who assisted me during the hackathon. Finally, a big thanks to my family who have been nothing but supportive and encouraging throughout this whole process.

Oslo, May 2018

Table of Contents

ABSTRACT	VI
PREFACE	VII
TABLE OF CONTENTS	VIII
LIST OF ABBREVIATIONS	X
1. INTRODUCTION	1
1.1 TECHNOLOGY, INNOVATION AND COLLABORATION TO ADDRESS GLOBAL CHALLENGES	1
1.2 GOAL AND RELEVANCE OF THE THESIS - PRESENTATION OF RESEARCH QUESTIONS	2
1.3 THE CASE: THE UN WOMEN BLOCKCHAIN PROJECT	4
1.3.1 <i>What is blockchain technology?</i>	5
1.3.2 <i>How can blockchain technology be used in humanitarian and development aid?</i>	6
1.4 STRUCTURE OF THE THESIS	8
2 THEORY AND ANALYTICAL FRAMEWORK	9
2.1 INNOVATION AS A MEANS OF IMPROVING HUMANITARIAN AND DEVELOPMENT AID	9
2.1.1 <i>The humanitarian market</i>	11
2.1.2 <i>Cross-sector collaboration for humanitarian innovation</i>	14
2.2 INNOVATION PROCESSES	18
2.3 A PROCESS MODEL OF COOPERATIVE INTER-ORGANIZATIONAL RELATIONSHIPS	21
2.3.1 <i>Risk & trust</i>	23
2.3.2 <i>Knowledge and learning</i>	24
2.4 ANALYTICAL FRAMEWORK	24
3 RESEARCH METHODOLOGY	26
3.1 CHOICE OF RESEARCH DESIGN	26
3.2 CHOICE OF CASE	27
3.3 CHOICE OF METHODS	28
3.3.1 <i>Semi structured interviews</i>	28
3.3.2 <i>Ethnographic observation</i>	30
3.3.3 <i>Content analysis</i>	30
3.4 ANALYZING AND INTERPRETING EMPIRICAL DATA	31
3.4.1 <i>Coding</i>	31
3.4.2 <i>Analytical tools and interpretations</i>	31
4 RESEARCH ETHICS	34
4.1 <i>Privacy, confidentiality and informed consent</i>	34
4.2 <i>Harm</i>	35
4.3 <i>Power relations</i>	35
4.4 <i>Validity and reliability</i>	36
5 INNOVATION IN HUMANITARIAN ORGANIZATIONS: THE CASE OF THE UN WOMEN BLOCKCHAIN PROJECT	37
5.1 UN WOMEN – ORGANIZING FOR INNOVATION	37
5.1.1 <i>The UN Women Innovation Unit</i>	38
5.1.2 <i>Partnerships – a central pillar in the innovation strategy</i>	40
5.1.3 <i>Innovation cycle, innovation principles and challenges</i>	41
5.1.4 <i>Why the blockchain project?</i>	43
5.2 THE UN WOMEN BLOCKCHAIN PROJECT	44
5.2.1 <i>The hackathon</i>	44
5.2.2 <i>Follow-up workshop</i>	47

5.2.3 <i>The blockchain lab</i>	48
6 RESEARCH FINDINGS, PART 1: THE EVOLVING RELATIONSHIP BETWEEN UN WOMEN AND THE COMPANIES	50
6.1 PATHWAY 1: BUILDING A BLOCKCHAIN CAPACITY IN UN WOMEN	50
6.1.1 <i>Exploiting internal knowledge in UN Women</i>	51
6.1.2 <i>Leveraging the blockchain knowledge across the UN ecosystem and the private sector</i>	52
6.1.3 <i>Producing an assessment report to capture knowledge</i>	55
6.2 PATHWAY 2: THE SEARCH FOR A PRIVATE SECTOR PARTNER	56
6.2.1 <i>The emergence of a cooperative inter-organizational relationship</i>	56
6.2.2 <i>Negotiations stage</i>	58
6.2.3 <i>Commitments stage</i>	63
6.2.4 <i>Executions stage</i>	65
6.2.5 <i>Assessments based on efficiency and equity</i>	66
6.2.6 <i>Managing risk in the IOR</i>	69
7 RESEARCH FINDINGS, PART 2: SUPPORTING AND CONSTRAINING FACTORS	74
7.1 <i>Cupids brokering the IOR</i>	74
7.2 <i>Support from top management and the willingness to take risks</i>	77
7.3 <i>Innovation funding</i>	79
7.4 <i>Technology optimism and resource dependency</i>	80
7.5 <i>Culture eats strategy for breakfast?</i>	81
7.6 <i>Learning gap between humanitarians and technologists</i>	84
7.8 <i>Are the individuals defeated by organizational requirements?</i>	86
8 DISCUSSION AND CONCLUSIONS	89
8.1 THE EVOLVING RELATIONSHIP BETWEEN UN WOMEN AND THE COMPANIES	89
8.2 FACTORS SUPPORTING AND CONSTRAINING COLLABORATION	92
8.3 LIMITATIONS OF THIS CASE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH	96
8.4 IMPLICATIONS FOR COLLABORATION BETWEEN THE HUMANITARIAN AND THE PRIVATE SECTOR	97
8.5 CONCLUDING REMARKS	100
LITERATURE	101
WEB SOURCES	108
APPENDIX A: INTERVIEW GUIDE - UN WOMEN	110
APPENDIX B: INTERVIEW GUIDE - PRIVATE COMPANY	112
APPENDIX C: OVERVIEW OF DATA COLLECTION	113
APPENDIX E: CONSENT FORM FOR INFORMANTS	115

List of abbreviations

ALNAP	Learning Network for Accountability and Performance in Humanitarian Action
CTP	Cash Transfer Programming
EoI	Expression of Interest
ICRC	International Committee of the Red Cross
IN	Innovation Norway
IOR	Inter-organizational relationship
NGO	Non-Governmental Organization
NOREPS	Norwegian Emergency Preparedness System
MSF	Medicines Sans Frontiers
OXHIP	The Oxford Humanitarian Innovation Project
R&D	Research and Development
RfI	Request for Information
RfP	Request for Proposal
SDGs	Sustainable Development Goals
UN	United Nations
UNDP	United Nations Development Program
UNFPA	United Nations Populations Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UN-OICT	United Nations Office for Information and Communication Technology
UNOPS	United Nations Office for Project Services
UN Women	The United Nations Entity for Gender Equality and Empowerment of Women
WFP	World Food Program
WHS	World Humanitarian Summit

1. Introduction

1.1 Technology, innovation and collaboration to address global challenges

The world is currently facing some of the biggest challenges of our time: the ongoing refugee crisis, severe natural disasters, climate change, and an increased number of wars and conflicts. As a result of these crises, 65,6 million people were in 2016 forcibly displaced inside and across borders (UNHCR 2017 URL). At the same time, the gap between humanitarian needs and financial resources available to meet the needs is increasing. These changes in the current situation and the increased focus on innovation as a response to the global challenges can be seen both as a result of general contextual tendencies for the humanitarian sector, and as a result of policy changes. Policies are focusing on the need for a more demand driven approach to humanitarian aid. This is exemplified by the Grand Bargain (OECD 2016), which is an agreement between humanitarian organizations and major donors aiming to shift resources away from draining backroom activities to frontline delivery of humanitarian aid paving the way for more efficient management of resources and innovative financing arrangements.

As the nature of crises changes, the current paradigms of humanitarian response are challenged. The humanitarian community will need to *“adapt if they are to maintain their relevance, reputation and impact”* (Ramalingam et al. 2015: 7). Over the past years there has been an increased focus on innovation, new business models and new ways of funding and distributing humanitarian aid. This signals a paradigm shift in the sector. As a result of the funding gap, many humanitarian organizations are looking into exponential technologies like artificial intelligence, virtual reality, internet of things and blockchain technology to investigate whether these technologies can help make humanitarian operations better and more efficient. However, the UN and other humanitarian organizations are traditionally not seen as neither innovative, nor particularly “high-tech”. They are therefore increasingly looking to the private sector to leverage their technical expertise and capabilities to learn how these technologies can be utilized in humanitarian settings.

After the World Humanitarian Summit in 2016 there has been an increased focus on collaboration across sectors to address the Sustainable Development Goals (SDGs):

Governments and humanitarian actors should build diverse and inclusive partnerships that reaffirm the core humanitarian principles, support effective and people-driven humanitarian action, enable first responders to take a leadership role, and leverage the power of innovation (Agenda for Humanity 2016).

As a result of this focus, collaboration between the private and humanitarian sector is seen as an important tool to develop innovative solutions to humanitarian needs and global challenges.

It is believed that increased inclusion of the private sector as a contributor to humanitarian aid, and new and innovative products and processes, will make humanitarian efforts more efficient, cut costs and help bridge the significant funding gap that the humanitarian organizations, donors, affected populations and host governments struggle with (Innovation Norway 2018: 10).

Due to this great momentum around innovation and private sector collaboration to address global challenges, there is a need to develop more knowledge on how these partnerships develop, what challenges they face, and how they can best be supported.

1.2 Goal and relevance of the thesis - presentation of research questions

There has been a significant amount of research within the broader management literature on how innovation processes unfold and how managers and organizations can undertake innovation activities more effectively (Tidd & Bessant 2013; Jones, McCormick & Dewing 2012; Baden-Fuller & Pitt 1996; Bessant & Davies 2007). Much less research has been done on innovation processes involving emerging technologies within the humanitarian sector. As a result of this, the understanding of the best practices for humanitarian innovation remains limited (Obrecht & Warner 2016). This underlines the academic relevance of this thesis, as well as its societal relevance.

Furthermore, the importance of companies to engage in activities with stakeholders outside the company to gain competitive advantage (Harrison & St. John 1996), or social legitimacy (Schuman 1995) is widely noted in the innovation literature. The locus of innovation often lies outside the boundaries of the company (Chesbrough 2003), and the access to external partners can be important in driving innovative ideas ahead. Research has shown that reaching

beyond current relationships is critical for radical innovation (O'Connor & McDermott 2004). A large extent of the research conducted on collaborations within the innovation literature is on partnerships between private companies or between companies and universities. There is a need to develop research and in-depth knowledge on collaborations between humanitarian organizations and the private sector, as such collaborations are increasing and have gained more focus (Austin 2000a). Previous literature offer some findings on collaborative innovation initiatives between non-profit organizations and private companies (Obrecht & Warner 2016; Austin 2000a, 2000b). However, there is little research on how these partnerships emerge and develop in the early phase, and especially what supports and constrains collaboration between the two sectors. To address these gaps in current research, this thesis will investigate the following research questions:

RQ1: How does the collaboration between a humanitarian organization and private companies emerge and unfold in the early phase of radical, high tech innovation processes?

RQ2: What supports and constrains collaboration between a humanitarian organization and private companies in the early phase of radical, high tech innovation processes?

To answer the research questions, a case study of the UN Women Blockchain Project was conducted. The case provides a fruitful example on how a humanitarian organization is looking outside the boundaries of their own organization in order to approach blockchain technology, which is a young and radical innovation. The case also gives insight into UN Women's process of finding a private sector partner to develop a blockchain solution for women and girls in humanitarian settings. Given the findings from this case study, and findings from previous research, the thesis will discuss implications for how cross-sector collaborations in humanitarian innovation can be managed in a strategic and effective way.

1.3 The Case: The UN Women Blockchain Project

This section will briefly present the case which will be investigated in this thesis. The case will be referred to as “The UN Women Blockchain Project”, or just “the blockchain project”. This section will start by introducing the context of the blockchain project, which includes the innovation partnership with Innovation Norway and the funding provided by the NOREPS grants. Blockchain technology will be presented, before explaining how UN Women believes this technology can be used to empower women and girls in humanitarian settings.

Innovation Norway (IN) is the Norwegian Government’s most important tool to support innovation and development in Norwegian industries. Within Innovation Norway, there is a unit called the Norwegian Emergency Preparedness System (NOREPS) that works specifically to respond to humanitarian needs by fostering innovation and preparedness in the humanitarian sector. NOREPS works towards these mandates by providing advisory services and humanitarian innovation and preparedness grants that UN Agencies and Norwegian NGOs can apply for (NOREPS 2017a URL). An important condition to receive innovation grants is working towards the SDGs through partnerships and innovative collaborations across sectors. This emphasis can be seen in the 2017 Call for Proposals:

The objective of this scheme is to support innovation projects where organizations in cooperation with the private sector develop new or more sustainable solutions for the humanitarian sector that will result in better and more efficient humanitarian response, thereby ensuring that more beneficiaries will receive improved assistance. (NOREPS 2017b URL)

In March 2017, IN signed an innovation agreement with the UN agency UN Women. Through the agreement, IN is committed to explore the possibilities in emerging technologies to accelerate the achievement of gender equality. The aim of the agreement is to engage the private sector to develop innovative solutions that will empower women and contribute towards reaching the SDGs (NTBinfo 2017 URL). The first project to be set up under this innovation agreement is the UN Women Blockchain Project.

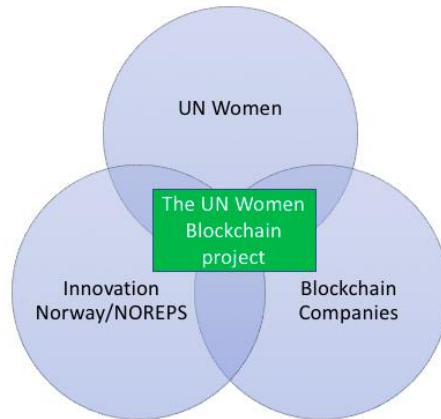


Fig 1: UN Women Blockchain Project spans across three different sectors

The project is funded through the NOREPS grants for humanitarian innovation, with the aim to explore the potential of blockchain technology to empower women and girls in humanitarian settings. As illustrated in Fig. 1, the project spans over three different sectors: public (Innovation Norway), private (blockchain companies) and humanitarian (UN Women). The case study will mainly focus on the collaboration between UN Women and the private sector since Innovation Norway has more of a facilitating role in the project.

1.3.1 What is blockchain technology?

First, an introduction to the technology that is explored in the blockchain project is needed. Blockchain is a decentralized data management and transaction technology, which was first developed for the Bitcoin cryptocurrency. The word “Bitcoin” was one of the top searches on Google in 2017, and there has been much attention around Bitcoin because of its exponential value growth over the past year. People are eager to learn more about cryptocurrencies and the underlying technology- *blockchain*.

Blockchain technology offers users the ability to build and maintain immutable and secure personal records, as well as to directly transfer digital assets without the need for intermediaries and associated costs. A blockchain is more precisely, a ledger of records arranged in blocks or data packages which uses cryptographic validation to link themselves together in a chain. The blocks are self-validating and completely secure, and the information is distributed and public so that everyone on in the blockchain network can see the exact same transaction history (Bauerle 2017 URL). This makes it impossible to tamper with the data. This new technology has received increased interest because of its central functions which

provide the users with anonymity, security and data integrity without any disrupting intermediates or expensive transaction fees (Yli-Huumo, Ko, Choi, Park & Smolander, 2016). Some believe that blockchain technology is the one technology that is most likely to change the next decade of business (Tapscott & Tapscott 2016 URL).

With the launch of the Ethereum blockchain in 2015, the use of blockchain has grown and become more varied. Ethereum is a decentralized platform built on a custom-made blockchain that runs *smart contracts*. Smart contracts are applications or algorithms that run exactly as programmed without the possibility of fraud, censorship or interference by intermediaries. These apps enable people to store debts, promises, documents or other information and move funds in accordance with instructions given in the smart contract (Ethereum Org 2017 URL). The most important difference between Bitcoin and Ethereum is that they have different purposes and capabilities. Bitcoin offers one application of blockchain technology which is a peer to peer digital money system. The Bitcoin blockchain is used to track ownership of the bitcoins. However, the Ethereum blockchain focuses on running the programming code of various decentralized applications like smart contracts (Ethereum Org 2017 URL). The Ethereum blockchain also has its own token or currency, called Ether.

1.3.2 How can blockchain technology be used in humanitarian and development aid?

UN Women has identified two potential cases where they think blockchain technology has the potential to improve the lives of women and girls in humanitarian settings: to send and receive digital assets directly, and (re)build civil and economic identity. Standing in the midst of the refugee crisis, UN Women has seen that the lack of identity documents is far more than just an inconvenience for refugees, and especially for women. For without a proof of identity, they are not able to get the medical and financial help they need. Without an identity, they will not be able to open bank accounts, which makes it difficult to re-build their lives after a crisis.

The use of Cash Transfer Programming (CTP) as a response modality in humanitarian operations has also gained increased focus over the last years (UNOCHA 2017 URL). Through CTP the beneficiaries¹ receive cash or vouchers that can complement the provision of in-kind assistance during emergencies. This saves time and resources for the humanitarian

¹ The term *beneficiary* refers to the people who are provided with aid in humanitarian and development settings.

organizations and it empowers the affected population to decide on their own how to meet their needs. It also stimulates local markets in fragile areas. Today, CTP goes through conventional bank systems. Aid money going through the bank system takes time, and has high costs. It is well known that a big share of the aid money gets lost on the way through expensive transaction costs and corruption (Ministry of Foreign Affairs of Denmark 2017). However, crypto currencies traveling on the blockchain are fast money, which can mean more lives saved in humanitarian contexts (Ministry of Foreign Affairs of Denmark 2017).

Transferring money through the blockchain also makes it possible to cut transaction costs significantly. The World Food Program's blockchain project in Jordan have cut transaction costs by 98 percent in their CTP (Juskalian 2018 URL). UN Women is therefore looking into how blockchain technology might cut time and transaction costs in cash based assistance. They are also investigating how identity papers can be stored on the blockchain, and thus provide women and girls in humanitarian settings with a secure, digital identity. However, there is still a need for further development of the technology to make it fit in a humanitarian context. It is still a "baby learning how to walk and talk", and there are great risks and uncertainties connected to this immature technology.

The goal of the UN Women Blockchain Project is to pilot one or more solutions in a refugee camp in partnership with one or two blockchain companies and other UN agencies. The project is a type of "open collective innovation" where UN Women looks to harness the technical skills and creativity outside their own organization (Obrecht & Warner 2016: 87) while also looking for the right companies to set up partnerships with. The innovation process has so far consisted of a hackathon, a workshop and a blockchain live testing lab that included different private companies, developers and other UN agencies.

To be able to answer the research questions, I have followed this innovation project closely from the beginning. Over the course of one year, I have attended all the events in the project and conducted interviews with various stakeholders in the project to investigate how the relationship between UN Women and the companies have developed over time. This because there is a need to develop in-depth knowledge on cross-sector collaboration in humanitarian innovation.

1.4 Structure of the thesis

The thesis will first present relevant literature on innovation in humanitarian contexts, innovation processes and collaboration before defining the analytical framework that will be utilized in the analysis. Subsequently, chapter 3 will discuss research methodology, and chapter 4 will discuss ethical considerations in the research process. Chapter 5 will present the empirical context, including how UN Women work with innovation and why they are doing the blockchain project. The companies involved in the blockchain project will be presented before describing the three key events in the innovation process. Chapter 6 and 7 will present the empirical findings from the analysis, and Chapter 8 will discuss the research findings in relation to the literature on cross-sector collaboration in humanitarian innovation. Limitations and implications for further research will also be part of this discussion. Finally, there will be a conclusion.

2 Theory and analytical framework

This chapter will first define the term innovation and present and discuss the concept of innovation in the context of humanitarian and development aid². Subsequently, the chapter will present literature on cross-sector collaboration in humanitarian innovation. Furthermore, a process perspective on innovation and collaboration will be introduced and discussed. Finally, the analytical framework that will be utilized in the analysis will be presented.

2.1 Innovation as a means of improving humanitarian and development aid

Innovation is often defined as the first attempt to carry out a new idea for a new process or product into practice (Fagerberg 2005: 4), or new combinations of existing resources (Schumpeter 1942). Innovations can be incremental or radical. Incremental innovation is to do what we do, but do it better. This is usually a slow process of taking small steps to improve an existing product or process (Tidd & Bessant 2013: 26). Radical innovation projects has the objective to create offerings that are completely new to the world:

They are distinguished not only by the promise of reward they offer, which is not only large in scope and strategically important to the corporation in terms of organizational renewal, but also by the risk and uncertainty that accompanies their potential outcome (O'Connor & McDermott 2004: 11).

Radical innovation is thus connected to high risks and uncertainties. This thesis will investigate how a UN agency approaches blockchain technology, which is a new and radical technology. To do that, an introduction to innovation in the humanitarian system is needed.

Innovation in the humanitarian system has received little attention until a decade ago. Organizations like Médecins Sans Frontières (MSF) and Oxfam had established mechanisms for innovation in the field of water, sanitation and hygiene (WASH) and medicine, but these mechanisms were not discussed outside of this specific sector (Obrecht & Warner 2016: 11). The enthusiasm for innovation in the humanitarian system was born in 2009 when The Active

²Humanitarian aid is designed to save lives and alleviate suffering during and in the immediate aftermath of emergencies, and development aid responds to ongoing structural issues, that may hinder economic, institutional and social development in any given society (Humanitarian Coalition 2017 URL). This distinction is well established in the humanitarian system, although the boundaries between humanitarian and development aid are blurred, as many humanitarian crises are protracted and long term.

Learning Network for Accountability and Performance in Humanitarian Action (ALNAP) was the first actor who undertook the first major piece of work on humanitarian innovation. ALNAP was established as a mechanism to create a forum on learning, accountability and performance issues for the humanitarian community (ALNAP 2017 URL). The concept of humanitarian innovation was spread out through the influential paper “Innovations in International Humanitarian Action”(Ramalingam, Scriven & Foley 2009), and supported by the establishment of a Humanitarian Innovation Fund (HIF).

Within a few years, the concept had been adopted by other organizations like World Food Program (WFP), the UN Office for the Coordination of Humanitarian Affairs (UNOCHA), the UN High Commissioner for Refugees (UNHCR) and International Committee of the Red Cross (ICRC) (Scott-Smith 2016: 2229). Since then, a number of humanitarian organizations have adopted innovation processes to foster new thinking about humanitarian assistance (Betts & Bloom 2014: 5), and there has also been an exponential rise in activities and funding for innovation in the humanitarian sector (Obrecht & Warner 2016:11). In the 2011 UK government’s review on humanitarian emergency response, they identified innovation as a key area for investment, which led to the establishment of the seven year, £48 million ”Humanitarian Evidence and Innovation Program” aimed at improving research and development activities (R&D) in the humanitarian sector (Obrecht & Warner 2016:11).

A central actor in creating knowledge about humanitarian innovation is the Humanitarian Innovation Project (OXHIP), established at the University of Oxford in 2012. The project undertakes research on the humanitarian system. It initially focused on the role of technology, the private sector and innovation in refugee assistance, and have now expanded the scope of their work by including refugee economies, bottom-up innovation, military-humanitarian innovation and governance innovation (OXHIP 2017 URL).

As mentioned, UN agencies and humanitarian non-governmental organizations (NGOs) have recently integrated innovation as an active part of their practice, and it is therefore still a relatively small amount of research published on this topic (Bessant, Rush & Trifilova 2015). The work on humanitarian innovation in recent years has shifted from looking at innovation at the level of organizations, towards exploration of the system-wide characteristics and capacities needed to foster innovation in the humanitarian sector and to what degree the system possesses these capacities (Bessant et al. 2014; Deloitte, 2015a; Deloitte 2015b).

As a sign of the importance of innovation in the humanitarian sphere today, “Transformation through Innovation” was one of four themes at the 2016 World Humanitarian Summit (Agenda for Humanity 2016). However, in the context of humanitarian aid and development, the term innovation has become a buzzword, and has been poorly understood in some humanitarian circles and its meaning has thus been contested. Betts & Bloom (2014: 5) defines innovation as “*a means of adaption and improvement through finding and scaling solutions to problems, in the form of products, processes or wider business models*”. As one can see, the definition provided by Betts & Bloom (2014) does not differ too much from the definitions found in the innovation literature which relates to a commercial consumer context. Betts & Bloom (2014) further points out that there are several elements to the definition: first, the humanitarian innovation concept is applicable to nearly any area from medicine, to logistics, to media. It may include technology, but it is not reducible to it. Second, they emphasize that innovation is not the same as invention: it does not have to involve something completely new, but can be to adapt something to a new context. Third, innovations can be both radical and incremental (Betts & Bloom 2014: 5-6).

2.1.1 The humanitarian market

So far, we have seen that innovation is increasingly becoming an integral part of the way the humanitarian organizations think and work. However, there are challenges in the understanding of how innovation processes should be managed amongst humanitarian organizations, and they are still learning how to implement effective innovation practices. How does innovation in the humanitarian context differ from innovation in companies in conventional consumer markets?

The innovation literature emphasizes the difference between invention and innovation; invention is the first occurrence of a new idea, and innovation is an idea taken into practice (Fagerberg 2005:4). Thus, it is a process or a product that is implemented into a market and that people want to use. In a humanitarian context, one speaks of *the humanitarian market* or *sector*. Nielsen and Rodrigues Santos (2013: 50) define the humanitarian market as “*the market created between humanitarian actors and suppliers of items to fill the needs of their staff and beneficiaries*”. The UN alone procured from the private sector \$17,7 billion in 2016 (UNGM 2017 URL). In other words, this represents a huge market for businesses with relevant solutions for the humanitarian sector. This complex market does however have various distinct characteristics which makes it different from the traditional consumer market.

First, humanitarian work addresses humanitarian crises and emergencies, which relate to sudden needs and shocks. The issues the humanitarian organizations are dealing with are often of great urgency and involve high risks. That in turn, makes the concept of risk and failure very demanding. The demands and changes are unpredictable and fast paced, which makes planning for innovation more challenging, and the stakes are much higher since humanitarian organizations deal with people's lives.

Second, the way the sector is organized also impacts innovation activities. The humanitarian sector consists of a complex set of actors and stakeholders which creates principal-agent issues³. Actors in the humanitarian market consist of non-profit organizations like NGOs, UN agencies, national preparedness centers like the DSB in Norway (Direktoratet for Samfunnssikkerhet og Beredskap), and private companies with relevant solutions to meet the needs in this market. In addition there are also governments, donors and the beneficiaries who are stakeholders in the market. The nature of the relationship between this complex set of actors leads to a rigid set of demands on humanitarian organizations, which inhibits the needed flexibility, explorative approaches and risk taking to gain innovative output in the sector (Nielsen & Rodrigues Santos 2013).

A third characteristic that is specific to the humanitarian market is the absence of a market place, at least in the conventional sense. In conventional, consumer markets, the marketplace would help select, support and scale the best solutions in collaboration with the end user. Most of these dynamics are absent in the humanitarian sector. While the end user in a consumer market place is the *consumer*, the end user in the humanitarian sector is the *beneficiary*, which is not the same as a consumer. This is because the beneficiaries in humanitarian contexts have limited consumer power, they have little opportunity to engage their benefactors to develop new solutions, and they have limited means to record and communicate their user experience to developers (Nielsen & Rodrigues Santos 2013: 61). This because the beneficiary is usually far away from the people who develop the product.

Furthermore, the beneficiaries are often in a personal situation where their concern is survival, not optimization and innovation. Thus, the popular principle of user driven innovation must mean something quite different when applied to the humanitarian sector. The beneficiaries do not have a range of products they are free to choose from like in the commercial market, but

³ Information obtained in an interview with informant working with innovation in the UN system.

are rather presented with solutions originated in a market demand described by international humanitarian organizations and development banks (Nielsen & Rodrigues Santos 2013: 61). This supports the observation of Mays, Racadio & Gugerty (2012: 134): “*The beneficiaries of disaster assistance are not analogous to consumers, who (in theory) can exercise choice and choose an alternative supplier if the price and quality of a particular product are not appealing*”.

Due to the fact that the end user is usually far away from the companies developing the solutions, this challenges the companies to truly understand the needs of the end user, and reports show that there is a clear need for more user-centric design in the humanitarian sector (Obrecht & Warner 2016:92). The end user can also be aid workers working for the organizations who provide aid in the field, where the product can be safety equipment for removal of land mines (NOREPS 2016a URL) or special housing units the aid workers can live in (NOREPS 2016b URL). The end user can also be the NGO or UN agency itself. When they are the end users themselves, the innovation is often a process innovation which allows the organizations to give aid in a more efficient way.

A fourth factor that characterizes the humanitarian market is the procurement systems. The paying customers in this market are the NGOs and UN agencies who procure the innovations (Nielsen & Rodrigues Santos 2013:54). Different organizations have different guidelines to follow when exercising procurement. The UN agencies for example, follows UN Public Procurement Guidelines (UN Org 2013). The guidelines are focused on driving down unit costs and attributes limited attention to lifetime value and total cost of ownership. That means that it is very difficult for a new product to penetrate the market. Moreover, the focus on cost-control entails that the actors are not incentivized to drive change, but rather to be extremely conservative and stick to what they have always done.⁴

In the case study conducted by Nielsen and Rodrigues Santos (2013:56) on the humanitarian market for off-grid energy solutions, large parts of the respondents described that the challenges they faced as a result from the complex humanitarian system constructed by policy limitations, stakeholder interests, donor funding and the humanitarian supply chain. This brings us to a fifth characteristic with this market, which is the flow of capital.

⁴ Information obtained in an interview with informant working with innovation in the UN system.

In the humanitarian market, the flow of capital differs from the conventional consumer market. Most importantly, it is a market that operates under severe resource constraints. The funding does simply not suffice. The capital in this market is donated by countries or private donors to the UN agencies and NGOs. The humanitarian organizations often work on short-term budget frames given by its donors, which inhibits long term strategies for technology introduction and sustainable solutions that will be economically beneficial in the long term (Nielsen & Rodrigues Santos 2013: 57-58). This also inhibits innovation processes, because some processes may need more time than the funding allows. This is in contrast to businesses in commercial markets, where one of the success factors is the business' ability to serve a market and sustain its operations in the long run (Mays et al. 2012: 135).

This section has provided a brief presentation of innovation in the humanitarian system, which is still a somewhat new phenomenon. Some characteristics specific to the humanitarian market were presented, and we have seen that the system has certain characteristics that hampers innovation and long-term strategies. The following section will present literature on cross-sector collaboration, which is often emphasized in the humanitarian innovation literature.

2.1.2 Cross-sector collaboration for humanitarian innovation

The innovation literature in general emphasize that innovations do not emerge from one single organization, but rather is the result of efforts between multiple organizations (Chesbrough 2003; Tidd & Bessant 2013). Research on humanitarian innovation suggest that partnerships and collaboration can potentially be a central part of innovation in humanitarian contexts as a means of generating new ideas, good practices and expertise and resources from private technology developers, humanitarian agencies, universities and locals (Obrecht & Warner 2016). Collaboration can be defined as “*any activity where two or more partners contribute differential resources and know-how to agreed complementary aims*” (Dodgson, 1994: 1).

Along with the increased practice of different types of cross-sector collaborations over the past decades, the body of academic literature dedicated to analyzing the topic has also escalated (Crane & Seitanidi 2014: 2). The term social partnership first emerged in the 1980s under the name public private partnerships (PPPs), which initially started with the

involvement of the private sector in urban renewal and local economic development (Wettenhall 2003). Since then, social partnerships have become more encompassing in terms of the issues and sectors involved, and have also gained an increased global outreach. Today, social partnerships across public, private and non-profit sectors have been used to tackle issues as climate change, health, education, crime and poverty (Crane & Seitanidi 2014).

Crane & Seitanidi (2014:1) define social partnerships as “*the joining together of organizations from different sectors of society to tackle social problems*”. There are four types of cross-sector partnerships described in the literature: business-government, business-non-profit, government non-profit, and tri-sector partnerships involving business, government and non-profit (Crane & Seitanidi 2014:4). Tri-sector collaborations in particular have been regarded as the most suitable for dealing with global challenges, because it is believed that they can overcome their individual limitations like governance failures or market failures when working together (Kolk 2014: 15).

Crane & Seitanidi (2014:3) further emphasize that the term *partnership* require collaboration over a significant amount of time, involvement in planning and implementation of activities by two or more organizations, and that there is a joint problem solving and a resource commitment from all parties involved. Others refer to the same phenomenon as social alliances, cross-sector collaborations, or other such variants. For the purpose of this research, this thesis will refer to the phenomenon as *cross-sector collaboration*, since the parties have not entered into a formal contract-bound partnership yet.

Since the World Humanitarian Summit and the Grand Bargain, cross-sector collaboration is considered as an important tool to achieve the SDGs by the top levels in the UN and humanitarian NGOs (Innovation Norway 2018: 10). However, there is still skepticism among humanitarian workers towards engaging the private sector in humanitarian response. Still, many actors have unique knowledge in relevant fields that could be potential collaborators for the UN agencies and NGOs e.g. diaspora groups, private companies and local first responders. According to Betts & Bloom (2014), research have shown that the humanitarian community has been slow to establish partnerships with these relevant groups.

Earlier, humanitarian organizations saw the private sector as an additional source of funding, but since 2010 they have been acknowledged as taking other roles, e.g. in process and product innovation (Betts & Bloom 2014). On the business side, the private sector has over the last

years seen the possibilities in emerging markets in developing countries, and also the UN and NGOs as potential customers (Betts & Bloom 2014). Rondinelli & London (2003) note that alliances may be the only option for companies interested in the knowledge held by humanitarian organizations, since the development of such expertise is too inefficient, costly and time-consuming for most companies. This view is also supported by Kramer & Kania (2006) who states that organizations have a deeper understanding of the social problem which in turn makes it possible for them to help companies to create more comprehensive strategies and set attainable goals.

Tidd & Bessant (2013: 24) point out that the developing world represents a new area for innovation. There are 4 billion people who earn less than USD 2 a day. These people represent a great possibility for developing radical innovations to meet the needs of this underserved market. There are various actions a business can take to address societal problems on their own. However, the literature show that it is clear that the ability to create social good is magnified when the public, private and nonprofit sectors combine their complimentary capabilities (Austin 2014).

If the humanitarian organizations want to include businesses in innovation processes, this demands closer collaboration between the sectors. A recent report conducted by Obrecht and Warner (2016) based on case studies of 15 innovation projects funded by the Humanitarian Innovation Fund discovered that the following factors tended to be present in successful innovation processes: collaborating with others, generating and integrating evidence, engaging with gatekeepers and end users, resourcing and innovation, managing risk, organizing an innovation process and creating a culture for innovation (Obrecht & Warner 2016: 7). The authors consider an innovation process as successful when either the innovation is implemented and widely adopted, or that the innovation is successful in the pilot stage but not successfully diffused, or lastly, the innovation fails at the pilot stage but serves as an important lesson for the process that will lead to improvement in the sector. The report suggests that partnerships and collaboration need to be improved to support innovation, and that the organizations outside the humanitarian system, like private companies, faces barriers to achieve this. The main findings from the report concerning practices of organizations and innovating teams that were effective in collaborating with others were:

- Senior leaders were supportive and proactive to collaboration (especially with organizations or businesses outside the humanitarian system)
 - Strong partnerships with organizations outside and within the humanitarian system were established and maintained
 - One person in the team had the responsibility of overseeing the relationships and engagement activities in the innovation process. This person was given time and resources for outreach
 - The same person dealt with the relationships management throughout the entire project
 - There was a strong “translation” capacity for communication across technical staff, humanitarians and end users
 - Extra staff was recruited from outside of the humanitarian system who had special technical competences to facilitate the spreading of ideas and practices
- (Obrecht & Warner 2016: 41)

These findings are not generalizable since it is only 15 different cases, but the findings for these specific cases show that collaboration can possibly be important for innovation. It further shows the importance of providing enough time and resources to manage collaborative relationships. According to the report, effective management of collaborations depends largely on the individual who holds the key relationship management role, and the passion and skills of the relationship managers were consistently found to be the key to the success in the innovation process (Obrecht & Warner 2016:41). These managers were often “translators” across the sectors relevant to the innovation. It was observed in the 15 case studies, and also in other work (Gray & Hettiarachchi 2014) that the clearest example of the need for translation is often in ICT-driven innovations that involves collaboration between humanitarians and the ICT sector.

Despite the belief that cross-sector partnerships and collaborations will help solve important challenges, research show that many factors make the process of developing and sustaining cross-sector collaborations complex and challenging. These factors include the differences in organizational mindsets and cultures associated with the private for-profit sector, and the not-for-profit sector (Dahan, Doh, Oetzel, & Yaziji 2010; Jamali & Keshishian 2009; Kolk, Van Dolen, & Vock 2010). Private companies and humanitarian organizations have fundamentally different structures and values, and the relationships between the two are often characterized by distrust and conflict (Dahan et al. 2010). Even though many see great potential for value

creation through such partnerships (Austin 2014; Austin & Seitanidi 2012a; Austin & Seitanidi 2012b), many of these partnerships are unsuccessful (Galaskiewicz & Colman 2006). This is mainly because of problems involved in management of the partnership processes (Kolk et al. 2010) such as distrust, misunderstandings, or power imbalances between the partners in the collaboration (Berger, Cunningham & Drumwright 2004; Selsky & Parker 2005; Seitanidi & Ryan 2007). This is also a trend found in alliances with partners in the same sector (e.g. business-to-business partnerships) (Sherman 1992).

This section has provided an introduction to research on cross-sector collaboration in humanitarian innovation. The following section will present theories on innovation processes from the general innovation literature.

2.2 Innovation processes

A process perspective on innovation will be the main underlying perspective of this thesis because the research involves an early stage innovation process that evolves over time. Innovation processes are seen as iterative processes of turning ideas into reality and creating value from them (Tidd & Bessant 2013). Van de Ven (1986: 591) provide the following definition of innovation processes as “(...) *the development and implementation of new ideas by people who over time engage in transactions with others within an institutional context*”. Following Van de Ven’s definition, ideas, people, transactions and context are seen as the four basic concepts most central to the understanding and management of innovation processes. From this management perspective, an innovation process is very much dependent on how people engage with each other, and thus the social aspect of the innovation process is emphasized. This perspective is especially relevant in regard to the research questions investigated in this thesis.

According to Kanter (2000), innovation processes have four distinct characteristics. First, the innovation process is *uncertain*. Both the source of innovation and the occurrence of opportunities to innovate can be unpredictable, while at the same time the innovating organization may have little or no knowledge or experience about the outcome of the innovation process. Second, Kanter (2000) points out that the innovation process is *knowledge intensive*. This means that the process generates new knowledge intensively, involving interactive learning and creativity. Third, the innovation process is *controversial*. Innovations

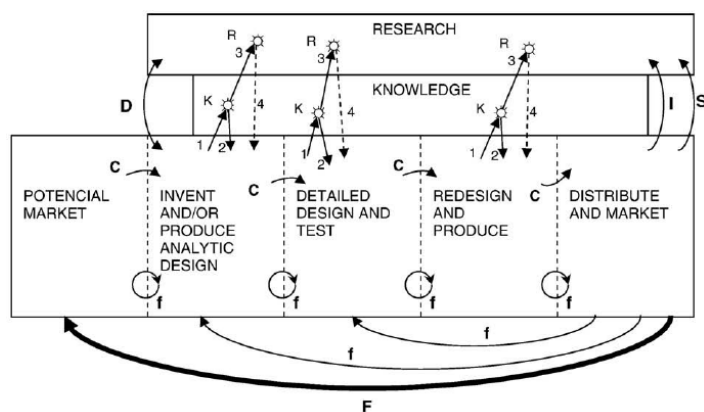
always compete with alternative courses of action. It is also controversial because it challenges and poses a threat to existing interests and structures. Kanter's fourth characteristic is that innovation processes are *boundary crossing*. An innovation process never happens in a vacuum and it rarely or never takes place within one single unit. According to Kanter (2000), there is evidence that many of the best ideas are interdisciplinary in origin. This is also in line with the definition of innovation as "new combination of existing resources" (Schumpeter 1942). Kanter (2000) suggests that innovations are most likely to grow in organizations that have cultures which emphasize diversity, multiple linkages inside and outside the organization, belief in people's talents, teamwork and collaboration.

An important piece of work done on the development of innovations from idea to implementation is "The Innovation Journey" (Van de Ven, Polley, Garud & Venkataraman 2008). The book summarizes the results of longitudinal studies of 14 different innovations over 17 years conducted by researchers from the Minnesota Innovation Research Program (MIRP). The core research question was "How and why do innovations develop over time from concept to implementation?" The goal was to understand the complexity of innovation processes.

The main finding was that the innovation journey is a repeating cycle of divergent and convergent activities that takes place at the same time. The researchers used a five-concept framework in each of the studies to find out how (i) *ideas* were developed to achieve (ii) *outcomes* by (iii) *people* who did (iiii) *transactions* with each other in changing organizational (iiiii) *contexts* (Van de Ven et al. 2008: 6). The researchers found that innovation processes are less orderly than what is implied by traditional innovation and management theories. Rather, they found that the ideas in innovation projects were not consistent from start to finish, but continuously developed in a converging and diverging pattern. Outcomes were not stable and final, but only partially stable and were likely to create spin-off ideas and new projects. The people engaged in the innovation journey were not a fixed set of people lead by a single entrepreneur, but were instead a fluid group of multiple people who took a variety of different roles over time. The transactions were not orderly, but rather an expanding and contracting network of stakeholders. The context both supported and constrained the innovation process, and the process itself was not simple but consisted of many different parallel, divergent and convergent paths in which some were related and some were not (Van de Ven et al. 2008). Further, Van de Ven et al. (2008) presents cross-organizational relationships as a core element of innovation journeys.

Even though research show that innovation processes are complex and untidy, various researchers have tried to capture the phases of the innovation process by illustrating different process models. The simplified, linear model of innovation presents four stages: identify the opportunity or problem, select a solution to the problem that needs to be solved, implement the solution, and finally, capture the benefits from the innovation (Tidd & Bessant 2013: 89).

The linear model is based on the assumption that innovation is applied science (Fagerberg 2005:8), which Kline and Rosenberg (1986: 275) criticizes. In their view, the process of innovation consists of a series of changes in a complete system, and not only in a technology or hardware, but also of the market, knowledge, production facilities and the social context of the innovating organization. The authors see innovation processes as sociotechnical systems, which means that they are both social and technical. They see both these aspects as equally important, which resulted in the Chain Linked Model:



Chain-linked model showing flow paths of information and cooperation. Symbols on arrows: C = central-chain-of-innovation; f = feedback loops; F = particularly important feedback.

K-R: Links through knowledge to research and return paths. If problems solved at node K, link 3 to R not activated. Return from research (link 4) is problematic - therefore dashed line.

D: Direct link to and from research from problems in invention and design.

I: Support of scientific research by instruments, machines, tools, and procedures of technology.

S: Support of research in sciences underlying product area to gain information directly and by monitoring outside work. The information obtained may apply anywhere along the chain.

Fig 2: Chain Linked Model (Kline & Rosenberg 1986).

Although there are positive and negative aspects of both the linear and the Chain Linked Model, innovation processes are complex and messy and are therefore hard to capture in a “one size fits all” model. There is however a need to develop an innovation process model that is more suitable for innovation in humanitarian contexts which have certain

characteristics that makes them different from innovation in a conventional consumer market. Such a model could serve as a tool for humanitarian organizations and companies to understand humanitarian innovation in a more comprehensive way, and thus how to manage it more strategically.

This subchapter have presented theories on innovation processes. Since this thesis is investigating collaboration in an innovation process, the next section will present a framework on cooperative inter-organizational relationships.

2.3 A process model of cooperative inter-organizational relationships

Ring & Van de Ven (1994) have developed a framework presenting the characteristics of the developmental process of cooperative inter-organizational relationships (IORs). The model serves as a useful point of departure to identify process events in the development of the inter-organizational relationship between UN Women and the private companies. The authors take a clear process perspective, and the framework can be used to study how IORs emerge, grow and dissolve over time. The authors define cooperative IORs as: “(...) *socially contrived mechanisms for collective action, which are continually shaped and restructured by actions and symbolic interpretations of the parties involved.*” (Ring & Van de Ven 1994: 96).

According to Ring & Van de Ven (1994: 91) knowing the inputs, outputs and structure of a collaboration is interesting for studying the process. The ways the actors negotiate, execute and modify the terms of the collaboration influence if the parties believe the collaboration is equitable and efficient. These motivations over time also influence the motivation to either continue with the collaboration, or to terminate it. The ways in which the collaborators interact is central to their relationship, and may cast a positive, negative or neutral light on the IOR.

The authors have developed the following framework of the process of development of cooperative IORs:

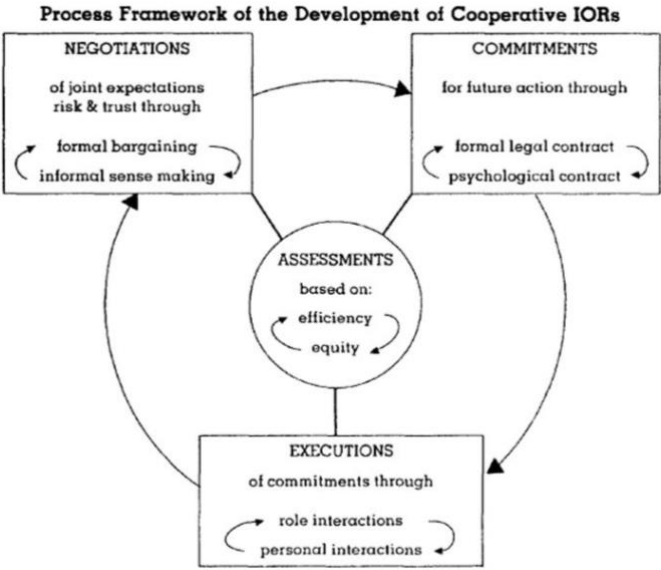


Fig. 3: Process Framework of the Development of Cooperative IORs (Ring & Van de Ven 1994: 97).

The conceptual framework above suggests that the IOR consists of repetitive sequences of negotiation, commitment and execution stages. Each of the stages are assessed based on *efficiency* and *equity*. Efficiency is defined as “*the most expeditious and least costly governance structure for undertaking a transaction*” (Ring & Van de Ven 1994: 93), and equity is defined as “*fair dealing*” (Ring & Van de Ven 1994: 93), which does not mean that inputs and outcomes always need to be divided equally between the parties, but reciprocity and fair rates of exchange between benefits and costs are sufficient. It also implies that the collaborators get benefits which are proportional to their investments (Homans, 1961).

In the stage of *negotiations*, the parties develop joint and not individual expectations about their motivations, possible investments and perceived uncertainties of a business project they are considering doing together. The focus of this stage is formal bargaining or informal sense making. The bargaining is when the parties discuss the terms and procedures of a potential relationship. Under the formal bargaining process are social-psychological sense making processes. Repeated bargaining and sense making processes are often needed to provide the parties with opportunities to assess uncertainties associated with the project, each other trustworthiness, the nature of each other’s roles and the parties’ duties and rights (Ring & Van de Ven 1994: 98).

The stage of *commitments* is where the parties reach an agreement on the rules, future actions and obligations in the collaboration. The terms of the relationship are agreed upon through a formal agreement, or understood informally among the parties. Depending on the level of risk and uncertainties associated with the business project and the willingness of the parties to rely on trust, many of the commitments will be agreed upon informally by a handshake (Ring & Van de Ven 1994: 98).

In the *executions* stage, the agreements are carried out into action; they buy necessary materials, pay what is agreed upon and start working towards the goal. At this stage, the parties get to know each other better on an interpersonal level through a series of role interactions. In practice, these stages will overlap, but they are separated in the model for analytical purposes. The duration of each stage will vary depending on the uncertainty of the issues involved, trust and the role relationships of the collaborators.

2.3.1 Risk & trust

Trust is one of the central terms in Ring & Van de Ven's (1994) model of cooperative IORs, and can be seen as an important foundation for collaboration. The authors argue that IORs will encounter two types of uncertainties: (i) uncertainties regarding future states of nature, and (ii) uncertainty about if the parties will be able to rely on trust to manage problems of adverse selection and moral hazards (Ring & Van de Ven 1994:93). The authors provide the following definition of trust, emphasizing the importance of interpersonal interaction and social bonds: "*Faith in the moral integrity or goodwill of others, which is produced through interpersonal interaction that lead to social-psychological bonds of mutual norms, sentiments and friendships in dealing with uncertainty*" (Ring & Van de Ven 1994:93). The authors further emphasize that if the parties rely on trust created at the interpersonal level, it can be conditioned by organizational role responsibilities or legal system which can mitigate the ability of the parties to rely on trust as a matter of first preference.

According to Nooteboom (2002c), trust is about expectations towards other people's actions. There will always be a possibility that our expectations towards other people will not be met, and risk is therefore a part of trust. Nooteboom (2002c: 45) offer the following definition of trust: "*Trust in things or people entails the willingness to submit to the risk that they may fail us, with the expectations that they will not, or the neglect or lack of awareness of the possibility that they might*". To trust someone's competences and to trust someone's intentions are two separate aspects of trust. Someone might have competences in a certain

area, but that does not mean that they will use those competences. To trust someone's intentions includes the expectations that the trustee will not act opportunistic. A friendly form of opportunism may be the lack of dedication or goodwill. Nooteboom (2002c) further emphasizes that trust is a cheap and flexible alternative to signing contracts and surveilling collaboration processes. Trust can also be present when a relationship starts, based on experience through earlier contact, reputation or shared norms and values.

2.3.2 Knowledge and learning

One way to deal with risk and uncertainties is according to Tidd & Bessant (2013: 330) to increase knowledge and learn as one goes along. In this way, the organization can calculate the risks associated with different options in the innovation process. Kanter (2000: 94) also stresses that the innovation process is *knowledge intensive*, and the way that knowledge is shared and utilized through social interactions affects the process.

According to Nooteboom (2000: 8) there is a distinction between first and second order learning in organizations. The first is learning to do existing things better and more effective, and the other is to learn to do new things from a new perspective. March (1991) and Holland (1975) distinguished between exploration and exploitation. Exploitation is to exploit expertise and competences which already exists in the organization in a better way, and exploration is to develop new competences by exploring new ways of doing things.

According to Nooteboom (2000), exploitation is needed for organizations to survive in the short term, but exploration is required to survive in the longer term. Hence, the literature argues that a combination of these two ways of organizational learning is required to survive now and later.

2.4 Analytical framework

Collaboration between the public, private and humanitarian sector is emphasized in the literature as a means of solving pressing, global challenges. The humanitarian sector is increasingly looking to include the private sector as a real partner in humanitarian response, although there is evidence that many of these collaborations are difficult to manage. To focus on the subject of collaboration in the innovation process in the UN Women Blockchain Project, the thesis will use the following concepts from the literature to analyze the research questions:

First, the analysis will identify two co-evolving *pathways* in the blockchain project. The pathway term is inspired by the chain-linked model presented in the theory chapter (Kline and Rosenberg 1986). In this perspective, the socio-technical development process has multiple layers, and the importance of the social context of the innovating organization is emphasized. The perspective recognizes the social and the technological aspects of innovation as equally important, which will also be emphasized in the analysis. The model also addresses research and knowledge as important parts of the innovation process, and not just the initial start-up phase, but it extends throughout the different steps in the process. In this thesis, the term *pathway* will be used to describe the two main ongoing layers of activities that UN Women does to achieve their goal of piloting a blockchain based cash transfer and identity solution in the field in partnership with a private company.

Second, Ring & Van de Ven's (1994) model for cooperative IORs will be an inspiration for how the data will be structured and discussed in the research findings chapter. This study does not aim to verify or falsify the model, but rather use it as a tool to guide the analysis and sort the data. The model is a useful point of departure to analyze the research questions because it captures the evolving social process of collaboration between different organizations over time. Central terms in the model will be used to analyze the evolving relationship between UN Women and the companies: the three stages of negotiations, commitments and executions, the terms efficiency and equity will also be investigated in the analysis, together with trust and risk which are also central building blocks in the model.

Knowledge and learning is not explicitly emphasized in Ring & Van de Ven's (1994) model, but will be addressed in the analysis as these terms are important in the Chain Linked Model, Kanter (2000: 94) also stresses that the innovation process is *knowledge intensive*, and that the way knowledge is shared and utilized through social interactions affects the process.

Finally, factors supporting and constraining the collaboration in the project will be identified from the empirical data. These will be discussed in relation to the literature on collaboration in humanitarian innovation in order to discuss implications for how collaborative innovation ventures can be managed in humanitarian settings.

3 Research methodology

This thesis uses a combination of qualitative research methods to best answer the research questions. Qualitative research emphasizes multiple meanings and interpretations rather than seeking to impose one dominant interpretation (Hay 2010: 5). In the application of qualitative methods, it is therefore hard to choose one common approach; it is up to the researcher to find and interpret the situation and then find the most appropriate research design and method to answer the research questions. This chapter will explain and discuss the methodological choices made throughout this research process.

3.1 Choice of research design

The research design applied in this thesis is *case study research*. Baxter (2010: 81) defines case study research as “*the study of a single instance or small number of instances of a phenomenon in order to explore in-depth nuances of the phenomenon and the contextual influences on and explanations of that phenomenon*”. Since the phenomenon investigated in this thesis is a process consisting of multiple events and interactions between people and organizations taking place over a period of time, case study research was an appropriate research design.

Yin (1994: 1) argues that case study is the preferred strategy when “how” or “why” questions need to be answered, when the researcher has little control over the events and when the focus is on a contemporary phenomenon. Case study was therefore appropriate to investigate the innovation process in the UN Women Blockchain Project, since it was current, I had little control over the events, and the main research question is a “how” question. Further, case studies can give detailed analysis of why theories or theoretical explanations do or do not fit in the context of the case, and thus seemed to be a good tool to investigate if theories and analytical terms about innovation processes and collaboration could be found in the data collected. At the same time, case studies can give room to investigate if new themes or categories emerge from the data. This approach provided the combination of inductive and deductive research that the research questions demanded.

As Baxter (2010) points out, a case study is more of a research design than a method. While research design is a theory of what can be researched, how to conduct the research and to what advantage, a method is more of a mechanism to collect data. Case studies often combine different methods or data gathering techniques. In this research, I decided to conduct a purely qualitative case study. This is because I chose to follow the UN Women Blockchain Project in depth and over time to investigate the research questions, and I wanted to aim all focus on this one case to gain a deeper knowledge about this particular innovation process. The aim was not to create a research project that could be generalizable, because innovation processes will always differ from each other because they are influenced by the people involved, and the context they are a part of.

3.2 Choice of case

According to Yin (1994: 23), the selection of which case to study results from specifying the primary research question. The research topic in this thesis is concerned about collaboration between humanitarian organizations and private companies in the early phase of radical, high tech innovation processes. The UN Women Blockchain Project was selected as a case to investigate this topic because it was a groundbreaking project aiming to develop a radical and new technology for a humanitarian context. Thus, the case had a great learning potential. The novelty and uncertainties connected to the project demanded collaboration between UN Women and various young technology companies. It therefore served as a fruitful example to investigate cross-sector collaboration. The project was also particularly interesting because of the differences in culture, size and level of maturity of the different actors involved.

The timing of the blockchain project was also an important factor for why this particular case was chosen. According to Yin (1994: 23), case studies are preferred to study contemporary phenomena. As the first phase of the blockchain project took place during the course of the year I was writing my thesis, it allowed me to observe real time events in the project. This gave me a richer insight into the evolving early phase of the innovation process. Furthermore, I was working at Innovation Norway at the time, which was an important factor for the choice of the case since Innovation Norway would help me get access to key informants and information.

Even though this was an interesting case to follow, it has some limitations and challenges. First, the thesis follows an early stage of a process, which means that there was a high level of uncertainties connected to the project. The final result of the project is yet unknown; it could be a great success, or it could fail. The thesis can therefore neither say anything about what factors are important for a *successful* innovation process, nor about the later stages of the process like the pilot phase or implementation phase. This was a limitation, but was is also a possibility to really dig deep into the early phase and see what factors supported and constrained innovation and collaboration in that phase.

Second, it was demanding and risky to follow a project which was at this early stage because I did not have any control over what happened in the project. The project could have stopped at any point, or it could have been pushed back so the timing did not work with the time frame of my thesis. The blockchain lab in New York was in fact pushed back for two months, which affected how much time was left at the end to analyze the data.

3.3 Choice of methods

The term *method* is used as a specific term for the investigative technique employed (Hay 2010: 5). The qualitative methods used in this thesis is a combination of observation, in-depth interviews and content analysis.

3.3.1 Semi structured interviews

In-depth semi structured interviews was the main method used in this research. An interview is defined as “*A means of data collection involving an oral exchange of information between the researcher and one or more other people*” (Hay 2010: 378). One of the biggest strengths in this method is that it allows the researcher to discover what is relevant and important to the informant (Hay 201: 103), and it is also a good way of gaining access to information about events, experiences and opinions. Interviews give insights into the differing opinions within a group, or reveal consensus on some issues.

Since the thesis was investigating a collaborative innovation project, interview was the most appropriate method to get a deeper insight into the process and interaction between the different companies and UN Women. 15 interviews were conducted with different

stakeholders in the blockchain project; companies, UN Women, other UN agencies, and Innovation Norway who funded the project.

The semi-structured interviews employed flexible interview guides. The questions asked were content focused and relevant to the research questions, but they were also flexible. Semi-structured interviews allowed me to change the questions along the way in the conversations, and to be open to what the informant thought was important. The interview guides were structured in categories with some open questions and several prompts under each question.⁵ All interviews were recorded with consent from the informants.

Selecting participants

Different strategies were used when selecting participants for the interviews. I used a combination of criterion sampling, opportunistic sampling and snowball sampling (Hay 2010: 75). Criterion sampling involves selecting participants that meet some criteria. In this research, the criterion was that the informants were involved in the blockchain project somehow; either as part of UN Women, as a part of a company involved in the project, or as a third party which was somehow engaged in the blockchain space, like other UN agencies or blockchain companies. Opportunistic sampling is when the researcher is flexible and can follow new leads during fieldwork (Hay 2010: 75). As the research project moved along, I got a greater understanding of which people would be able to provide me with certain details, and I was able to get in contact with them. Sometimes this was done through the snowball method, which is when informants provide information about other people the researcher should get in touch with.

The observation at the hackathon served as a valuable way to recruit informants for interviews. It was important to establish contact with some of the participants at the hackathon so it would be easy to contact them later for interviews. During the event, I tried to strategically look for people who took leading roles in their teams. I started to talk to them about my thesis and the event to establish the first contact. At the end of the hackathon, I reached out to people with key roles in the three winning teams and asked for their emails to contact them later for an interview. I chose to focus on the participants of the three winning

⁵ See Appendix A and B for examples of interview guides

teams because I knew that they would be most likely to take their ideas from the hackathon further, and continue being part of the UN Women Blockchain Project.

A good connection was also established with the UN Women representatives at this event. I had already emailed with some of them beforehand to get their consent to observe the event. They were all very interested in the topic of my thesis, and they were happy to be interviewed. I contacted them at a later stage and scheduled interviews. I experienced that my role as an employee at Innovation Norway helped me to get access to informants.

3.3.2 Ethnographic observation

Observation is defined as “*purposefully watching worldly phenomena. Increasingly broadened beyond seeing to include apprehending the environment through all our senses for research purposes.*” (Hay 2010: 381). Observation was used in three different settings: the hackathon, the follow-up workshop, and the blockchain lab in New York City. To capture what was observed, field notes, recordings and photos were taken. Observation was valuable in these situations because I was able to not only watch what happened, but also feel the energy and the atmosphere in the room. I also engaged in some informal conversations with the participants at these events, which allowed me to listen to their expectations and motivations. As I got to know the people at the events, and they got to know me, it was easier to talk to them about the process, and I got the impression that they trusted me and was genuinely interested in contributing to my thesis. This probably also had something to do with the fact that they knew that I also worked for Innovation Norway who funded the project, and contributed in facilitating some of the events. This may also have caused some confusion for some of the informants about my role.

3.3.3 Content analysis

As a supplement to the interviews and observations, documents and reports connected to the UN Women Blockchain Project were analyzed. These included UN Women’s innovation strategy (UN Women 2017a), the assessment report from UN Women to Innovation Norway investigating how blockchain can be used in UN Women’s humanitarian response, the Expression of Interest document (EoI)⁶ and the Hackathon Facebook Event page (Facebook Event 2017 URL). The strategy used to analyze these documents was to use the same set of

⁶ The EoI and the UN Women assessment report are not available publically. Contact me to get access.

codes as was used to analyze interview transcripts and field notes to see if the same themes emerged in the documents, or if some new themes came up.

3.4 Analyzing and interpreting empirical data

Analyzing and interpreting qualitative data is required to bring order and understanding of the empirical research findings. Analyzing and interpreting the data material is a process which implements a set of analytical strategies that produces interpretations, which is then integrated into a theory (Denzin & Lincoln 1998: 275). This requires a systematic approach to try to avoid different types of biases. The choice of analytical strategies and interpretations depends on what questions one would like to answer, what resources one has, and also what the results will be used for (Taylor-Powell & Renner 2003). In terms of analytical strategies, I chose to code the data into categories and sub categories, and then do a time-series analysis where the information of the key events observed were put into a timeline to show how the codes and categories evolved throughout the process (Yin 1994: 117).

3.4.1 Coding

The data consisted of interviews, field notes and documents. The interviews were recorded, and transcribed. After transcribing interviews, all data was read through to get an overview and properly get to know the data. All data was then uploaded to Nvivo, a coding software for qualitative data. The software was used to apply categories to the data. Based on previous research on innovation and collaboration and the collected data, some preset categories were created. Throughout the coding process, new categories and sub-categories were created as they became apparent in the coding process (Taylor-Powell & Renner 2003: 3). This process enabled me to analyze terms from theory, in addition to discover new terms, as demanded by the research questions.

3.4.2 Analytical tools and interpretations

The aim of the thesis was to explore an ongoing process, and it is therefore ethnographic in its design. The aim was not to deductively test, verify or falsify one single theory, tool or model. Although Ring & Van de Ven's (1994) framework for cooperative IORs was used as a framework for the analysis, the aim was not to verify or falsify that model, but rather to use the model to structure the findings of the process and to see if some of the elements of the

model was found in the data. To cater to this empirical way of working and at the same time anchoring the empirical findings it in previous research, some central terms were extracted from the data, and compared to existing literature on innovation and cross-sector collaboration. In this way, I was also able to discover new themes emerging from the data and thus contributing to creating new theory.

Qualitative research is interpretive, and these interpretations are constructed (Denzin & Lincoln 1998: 29). The analysis and interpretation of the data is not a specific phase in the research, but rather an ongoing process which starts while collecting the data. The interpretation started during the observations and interviews. The interpretations were captured by writing down thoughts in the field notes and interview notes. They were finally organized in the analysis. It is important to stress that there is no single interpretive truth, and factors such as academic and social background can affect the interpretations. However, the systematic process of interpreting data was applied to reduce level of bias.

Objectivity, subjectivity and biases

Objectivity firstly relates to the personal involvement between the researcher and the research subjects. This kind of objectivity is impossible in social research because the methods cannot be separated from the structures of society (Hay 2010: 26). There is a lack of separation between researcher, research and society, and qualitative researchers give great emphasis to it. Secondly, objectivity it relates to the researcher's independence from the object of research. This is also difficult, because researchers will always bring their perspectives and their stories to the research (Hay 2010: 35).

Subjectivity on the other hand, is to insert one's own perspectives and opinions into research practice. Qualitative research usually involves social interaction, and subjectivity is therefore emphasized. As a researcher, I used my own personal skills and resources to establish trust and rapport with the informants, and subjectivity was therefore an important part of the research. There is a dialogue between the researcher and the informants where interpretations of the world are created, confirmed or disconfirmed as a result of interaction with other people in specific contexts, often referred to as intersubjectivity (Hay 2010: 35). This intersubjectivity was very important in this research since an ethnographic approach was utilized to answer the research questions. However, when conducting qualitative research, one's own subjectivity and possible sources of bias should be declared and summarized.

First, my role as an Innovation Norway employee is a source of bias. I may be affected by the culture and the dominating opinions at my workplace. My role as an IN employee may also have affected how my informants answered the questions, particularly in the case of UN Women. Since IN funds the project, UN Women is naturally thinking of how they appear when speaking to an IN employee. That may have restrained them from saying their honest opinion or experience with certain things. It is however important to stress that I would never have been able to get this close to UN Women and other UN agencies without being connected to Innovation Norway.

Second, as a master student studying innovation, a positive bias towards innovation is present (Kimberly 1981). In innovation studies, innovation is often viewed as a good thing because the idea must solve a problem, be constructive or useful. New ideas that are not perceived as problem solving or useful are usually not referred to as innovations: they are called mistakes of failures. To tackle this bias, one cannot determine the usefulness of an idea before the innovation process is completed (Van de Ven 1986). Since this research has studied the early phase of an innovation process, it cannot be determined if using blockchain in humanitarian settings is a good idea or not.

Third, my previous academic background of Culture and Communications is a source of bias. This background has shaped my interest in the social part of innovation, culture and the relationships between people in innovation processes. Furthermore, I became friends with some of the research subjects, which may have affected my interviews in the sense that I got more honest answers. On the other side, my new friendships may have had an effect on my interpretation of my data, and even how interview questions were worded.

4 Research ethics

The engagement with human research subjects raises important and significant questions about ethical research practice. Research ethics is defined as “*the conduct of researchers and their responsibilities and obligations to those involved in the research, including sponsors, the general public and most importantly, the subjects of the research*” (O’Connell-Davidson & Layder 1994: 55).

4.1 Privacy, confidentiality and informed consent

Qualitative research methods often involve invading the research subject’s privacy. Even though the data collected in this research was not of sensitive character, the interviews contain personal views and opinions (Hay 2010: 28-29). All interviews were recorded under consent of the informants. The audio files and all transcribed data material was stored in a password protected memory stick. The transcribed material was anonymized with the use of pseudonyms for names of people and companies. However, the people engaged in the blockchain project might recognize companies or individuals in the study because they know them well. The informants were informed about this aspect before the interviews were conducted. This may have restrained them from being honest about certain things, but the ethical consideration of the well-being of the informants was more important.

Before conducting interviews, a notification form was submitted to the Data Protection Official for Research (NSD). Informed consent was also collected prior to interviews. Informed consent means that informants must give their permission to involve them in the research (Hay 2010: 29). This permission must be *informed*, which means that they need to get all relevant information about the research before agreeing to participate: what issues will be explored in the research, what the thesis will be used for, what is expected of the informants, and the researcher must also provide information about their right to withdraw from the research at any point. This was communicated through a consent contract⁷. To some of the informants this information was provided via email or orally instead.

Before the observation sessions took place, emails were sent out to the organizers of the events with information about the thesis and asked permission to observe the event. The events were quite big and involved many different people, so it was a challenge to inform all

⁷ See Appendix E for the consent contract

of the participants of my role. At the hackathon I introduced myself and my assistant to each of the teams and explained the scope of the thesis. Small business cards were handed out with details about the thesis and my contact details. This was also a good way to start a dialogue with the teams, since many of them found my project exciting and relevant. At the blockchain lab, I introduced myself and my role to the people I spoke to, since I was unable to inform all the participants at the event of my role.

4.2 Harm

Research should not expose informants or the researcher to physical or social harm. It is very unlikely that a social scientist causes physical harm to informants. However, one may cause psycho-social harm when bringing up issues that may upset the informant (Hay 2010: 29). Even though this research did not involve collecting information of a sensitive character, I catered to the possibility of exposing informants to psycho-social harm by designing interview questions that ensured a certain structure of the conversation. Informants were properly anonymized so they could tell their honest opinion about a subject without being recognized. It was important not to influence the innovation process and the relationships between the different actors involved in the blockchain project.

4.3 Power relations

Qualitative research is interwoven with relations of power in various ways (Hay 2010: 32). It may be through the way the researcher communicates the results, the way the results are interpreted, or the way the interview questions are worded. There also exists a power relation between the interviewer and the interviewee when conducting interviews. Sometimes the two have the same social position, which is a reciprocal relationship, and sometimes they have an asymmetrical relationship characterized by a significant difference in the social position of the researcher and the ones who are being researched (Hay 2010:32). In this research, the relationship between me and the informants from the private companies was in most cases quite symmetric in terms of age, social position and education level. When interviewing representatives from UN Women or other UN agencies, there was a more asymmetrical relationship. People working in the UN system usually have high education, a high social status and they are in a greater position of influence than I as a researcher and a student. As a researcher, I was “interviewing up” when speaking to UN representatives (Hay 2010: 32). However, they also knew that I was an Innovation Norway employee, and as an Innovation Norway employee, I experienced the interview situation as more symmetric. Innovation

Norway funds humanitarian innovation projects in the UN, and the UN agencies naturally want to get access to some of that funding.

4.4 Validity and reliability

The term validity refers to the accuracy and truthfulness of the research findings. Reliability, which is the stability of methods and findings, is an indicator of validity (Denzin & Lincoln 1998). Validity is then two things: whether or not the results for the research is generalizable, and if you are able to answer your research question through your research methods. The aim of an in-depth case study is not to generalize, but to get a deeper, qualitative knowledge about a phenomenon. The results in this thesis relies upon the information provided by a very limited number of informants connected to one project. The results of the thesis can therefore not be generalized.

To ensure validity and reliability of my research within the frame of qualitative case study research, the research was designed in an inductive way to be able to best answer the research questions. The research questions were quite open to begin with, and as I got to know the data better and understood what kind of research question the data would be able to answer, the research question evolved to be more defined and specific. In the research, I designed for reliability and validity by conducting several sets of interviews and observations at different stages of the ongoing innovation process, and by analyzing relevant documents to challenge my own interpretations of the data. Reading through the first sets of interviews, I got some impressions of the innovation process and some of the enablers and barriers in the innovation and collaboration process. In the second round of interviews and observations I actively tried to challenge and falsify the findings from my previous data collection. In addition to observations and interviews, relevant documents were analyzed to see if the findings from that analysis could back up what was found in the interviews and observation. Combining methods in this way contributed to the validity and the reliability of the findings. However, as a student coming from the field of culture and communications and innovation, while also being an Innovation Norway employee, affected the research and thus the research findings. If an economist were to follow the same innovation project, the choice of research design, methods and analysis would probably be quite different.

5 Innovation in humanitarian organizations: the case of the UN Women Blockchain Project

This section will present the empirical context of the case study analysis. The chapter will first present UN Women and the research findings on how they work with innovation, and why they are doing the blockchain project. Subsequently, there will be an introduction of the key events in the blockchain project and some of the companies involved.

5.1 UN Women – organizing for innovation

The UN General Assembly established UN Women in 2010 to accelerate the progress of gender equality and the empowerment of women globally. According to one of the informants in UN Women, the organization has a three-folded mandate: First, their mandate is to work normatively with policies in the UN that support gender equality and empowerment of women. Second, they are mandated to coordinate the work on gender equality across all UN agencies and make sure that policies on gender equality are being addressed throughout the UN as a whole. The third part of their mandate is to implement programs in the field that promote gender equality and women's rights. UN Women usually does joint programs together with other, bigger UN agencies to fulfill this mandate. Collaboration with other agencies is therefore *modus operandi* for UN Women.

To achieve the goal of gender equality, the young UN agency is increasingly focusing on innovation and technology:

Innovative approaches are central to delivering the SDGs for all. Innovations in policies, management, finance, science and technology that disrupt “business as usual” are increasingly being recognized as a precondition to accelerate the achievement of SDGs for all. From mobile banking ventures that facilitate women's entrepreneurship to e-learning platforms that take classrooms to individuals, social innovations have the potential to serve as a powerful tool to break trends and increase the awareness, access and availability of opportunities for marginalized groups (UN Women 2017a: 1).

During the gathering of empirical data, there were some central topics that came up in relation to how UN Women works with innovation: their innovation unit, the innovation strategy, partnerships with other UN agencies and the private sector, and that support from senior management is critical to drive innovative efforts ahead.

5.1.1 The UN Women Innovation Unit

As a result of their increased focus on innovation and technology, UN Women established the UN Women Innovation Unit with the financial support from the government of Denmark in 2017. The innovation unit is placed under supervision of the Deputy Executive Director of UN Women. It is a small unit of four people working from the UN Women Head Quarters in New York City. They operate by leveraging the country offices and units across the organization:

Actually, our innovation work has become probably within the organization the most cross divisional teams that we have. So, we kind of have a joint team that's the innovation unit, the IT unit – because the innovations that we focus on from the headquarters are technology- and then our programming units. So, our country offices, humanitarian unit and so on. (UN Women 1)

The blockchain project is an example of this cross-divisional way of working. Here, the humanitarian unit has the implementing and project management responsibility, and the innovation unit and ICT unit support the project by providing quality assurance, technical support and making sure that learnings and knowledge is captured and shared. According to the head of the innovation unit, this way of working is to mainstream innovation across the organization:

But we actually prefer this approach because it's also a better way for us to mainstream innovation across the organization, and it involves the implementing teams and they have a greater ownership over it is also a way for us of mainstreaming. (UN Women 1)

According to an interview with one of the officers in the innovation unit, the idea of the innovation unit is to be a small R&D lab where UN Women can put small investments into small pilots to see whether they are successful. If a pilot is successful, the project can be scaled up into their country offices. The innovation unit is also aiming to be a part of a broader innovation ecosystem. When asked how the innovation officer organizes her work, she points out that an important part of her job is to work across UN Women's units, but that it also requires keeping up with the industry and partners outside of the humanitarian sector:

So, on one side, you have to work intensely with the internal colleagues from different units. From the project idea development to the system development and to project size election, beneficiaries and partners. On the other hand, you have to keep updated with what is happening outside of the public sector. Especially because we are focusing on technology, I am very interested in the technology development in Silicon Valley, in Europe and in China. (UN Women 2)

When asked how the unit works to generate new ideas, the innovation unit officers answered that they have no formalized way of generating new ideas. One of the officers suggested that it could happen in two ways: either the idea would come from the top management, or the idea can come from ordinary meetings, brainstorming sessions or talks with other UN agencies, donors or the private sector.

The importance of support from senior management in innovation initiatives came up as an important subject in several interviews: *“Because we need to get support. Whenever we have an idea, we need to get support from senior management to have endorsement to go this direction.”* (UN Women 2). When speaking to the Deputy Executive Director in UN Women, he also pointed out that it is very important with the support from senior management to bring innovation initiatives forward. He also said that the blockchain project was his idea, which was confirmed by other informants in UN Women:

I think it started with... Our Deputy Executive Director is very engaged with innovation, and not only blockchain, but other technological solutions as well. He has been very clear about wanting UN Women to be an innovative organization, and that he wants us to look at the technological solutions out there that can address the 2030 agenda, which is to address those left the furthest behind. (UN Women 4)

Furthermore, the head of the innovation unit explained that new ideas often come from the field offices. To collect these ideas, they have done open calls with the country offices in order to co-identify potentially high impact solutions, and that they apply a funnel approach to capture these ideas:

You know, we have a funnel-approach. So, we kind of cast the net quite widely to come up with as many ideas as we can, and then we try to see which of those ideas have the most potential to take to the next stage. (UN Women 1)

One of the innovation unit officers also confirmed that the country offices are important in coming up with new ideas, although there are some challenges to that approach:

And we count on the capacity of the country offices a lot because the innovation happens on the ground. But it's also not easy to communicate on this because of time differences. Simply because we're not on the ground, we don't know 100% of what is happening there, and we cannot talk to local partners by ourselves. So, there are some barriers. But I think keep constant communication is the key. And maybe

building the internal capacity of both on us and also on our colleagues in the different units is also a key so that the process can be smoother. (UN Women 2)

The UN Women Innovation Unit further organize their work around their innovation strategy “Making Innovation and Technology Work for Women” (UN Women 2017a).

5.1.2 Partnerships – a central pillar in the innovation strategy

UN Women has launched an innovation strategy 2018-2021, where they have defined innovation and technology as one of the key drivers for change (UN Women 2017a). In the strategy, they have looked at the barriers towards innovation and technologies working for women and girls. They have defined four key barriers they need to address:

1. limited market awareness and investments in innovations that meet the needs of women
2. gender blind approaches to innovation
3. the underrepresentation of women as entrepreneurs and innovators
4. the perceived high risk-low reward profile of innovations for marginalized women and girls

Based on these four barriers, UN Women has developed a strategy on how to address them, which focuses on a partnership approach. *“Partnerships are key to accelerate industry-wide change and to remove the barriers to the advancement of women and girls in innovation, technology and entrepreneurship”* (UN Women 2017b URL). According to their strategy, they will not manage to address these barriers through efforts done by individual entities. They therefore plan to address the barriers in an integrated manner through a partnership approach by (i) developing markets for innovations that advance gender equality; (ii) integrating gender issues within innovation; (iii) promoting women as innovators and entrepreneurs; and (iiii) investing directly in technology-driven innovative solutions that meet the needs of women and girls (UN Women 2017a).

An informant from the innovation unit explained that they work towards this strategy in practice by bringing together the private sector, NGOs and academic institutions to investigate what are the constraints to them investing more in innovations that work for women, and what can be done at an industry level to address these. They launched this work

as the Global Innovation Coalition for Change (GICC), which serves as an example of how UN Women works to address the four barriers through a partnership approach. The GICC was launched to foster the market awareness to remove the barriers and to drive industry action to make innovations work better for women and girls.

Furthermore, UN Women is also developing women innovation principles, tools and methodologies in order to integrate a gender perspective throughout the innovation cycle. They also work on increasing the number of women entrepreneurs and innovators both in their innovation work and in their more standard programming by working with women entrepreneur incubators and other UN agencies to try and ensure that women startups that are incubated and supported. They also have their own portfolio of investments that they prototype and pilot themselves. The blockchain project is within this kind of portfolio.

According to their innovation strategy, UN Women believes that leveraging the full potential of innovation and technology to bring about transformative change will require an enabling policy environment and a coalition of multi-stakeholder partnerships across industries and between the UN, the private sector, national governments and civil society. Leveraging the pooled expertise and resources brought by such partnerships, UN Women is currently working to improve the quality of its innovation initiatives and create opportunities to take successful innovations to scale (UN Women 2017a: 5).

5.1.3 Innovation cycle, innovation principles and challenges

The innovation strategy (UN Women 2017a) further states that UN Women have adopted a three-stage innovation cycle, which they argue creates a funnel that allows strong ideas to filter through the process and be scaled up:

- Co-identifying potential high impact innovations to achieve gender equality and women's empowerment;
- Testing, prototyping and piloting, supported by rigorous monitoring and evaluation systems to facilitate adaptive management;
- Scaling up innovations to increase impact in the lives of women and girls.

Furthermore, a background paper from a joint meeting of the executive boards of the UN Development Program (UNDP), UN Populations Fund (UNFPA), the UN Office for Project

Services (UNOPS), the UN Children's Fund (UNICEF), UN Women and World Food Program (WFP) states that all these agencies have adopted and endorsed the innovation principles, originally developed by UNICEF (UNICEF 2015). The innovation principles are: design with the user, understand the existing ecosystem, design for scale, build for sustainability, be data driven, use open standards, open data, open source and open innovation, reuse and improve (UNICEF 2015: 4). The report further identifies some of the challenges the UN faces in the development and scaling of innovations that will need further action: partnerships, risk-taking, financing and measuring impact. To assess the sentiment around these four areas, during the meeting the audience (national governments, board members and other stakeholders) was polled to answer a series of questions which showed the following results:

- The private sector and governments will be the most important partners to support innovations for development in the future.
 - A modest amount of risk must be taken by agencies in order to try out a new project which, if successful, can potentially greatly benefit a target population.
 - Financial risk and lack of impact are the primary concerns for engaging in innovative projects.
 - The best marker of success around innovations that have achieved their intended results is that they can be shared globally as knowledge with other organizations or governments around the world.
- (UNICEF 2015: 6-9)

This section has presented UN Women, which is a young UN agency increasingly working with innovation and technology. Their establishment of an Innovation Unit in 2017 and their new innovation strategy are both manifestations of this innovation turn in the organization. Working to generate ideas from multiple sources, getting support from senior management and working through a partnership approach are some of the ways that UN Women work with innovation. With that being said, the head of the innovation unit also emphasized that they need to improve the innovation capability across the organization and influence the UN Women staff to take more innovative approaches. The following section will focus on one of the ongoing innovation projects in UN Women which is the case investigated in this thesis: The UN Women Blockchain Project.

5.1.4 Why the blockchain project?

When investigating how and where the idea of the blockchain project started, according to one of the informants in UN Women, the idea had existed in the organization for some time before the hackathon, but it was mostly talk at that stage. They had started to dip their toe into the technology to learn more about it, but things started moving when the dialogue between Innovation Norway and UN Women was initiated. When Innovation Norway and UN Women started their discussion on collaborating on an institutional level, the NOREPS unit in Innovation Norway was eager to find an innovative project to support in the light of their newly established partnership and NOREPS' new mandate to work with humanitarian innovation. The UN Women Innovation Unit presented four different ideas for innovation projects they would like to get funding for through the NOREPS grants. After looking at the four options, Innovation Norway chose to fund the blockchain project, which was a surprise:

And we ended up choosing the riskiest project that no one really knew how it was going to turn out. And they surprised them. And we were surprised too that they had sent us such an innovative proposal. So, we got really excited together. (Innovation Norway representative)

The reason why UN Women want to explore the possibilities in blockchain technology in their humanitarian programs is that the technology is a decentralized, peer-to-peer structure which removes intermediaries and expensive transaction costs. It is a well-known fact that the UN faces a large funding gap estimated to be approximately US\$ 15 billion according to the High Level Panel on Humanitarian Financing Report (2016). This is why UN Women and various other UN agencies are looking into how blockchain technology can make humanitarian assistance more cost saving and efficient. Furthermore, blockchain presents the opportunity to use information and resources in a more transparent and effective way and to store and share other types of information like identity documents, land rights, medical journals etc. Storing these documents digitally can in turn be used to create a blockchain ID that enables UN agencies to pool humanitarian solutions to better serve people affected by crises:

And the blockchain project is for us about finding better ways to target our support: both the support we give as UN Women, but also the support provided by other, bigger humanitarian organizations. To make it more effective and transparent, and to try to build systems for women and girls who are refugees or internally displaced. Both in terms of identity and cash transfers, and some of the things you know we worked on in Oslo. So, for us the main thing is that we want to improve the programs we have

ourselves, but also to improve the way the UN works as a whole, and to make the support more effective and transparent, and to make it better for women and girls. (UN Women 4)

As stated in the quote above, UN Women are looking into two use cases of blockchain technology: cash transfers and digital identity. Although the technology offers many possibilities, there are many risks and uncertainties remaining due to the technology being immature. This will be discussed further in the analysis. This section has presented how UN Women works with innovation, and why they are doing the blockchain project. The following chapter will present the key events in the innovation process.

5.2 The UN Women Blockchain Project

The blockchain project evolved through three key events during the first year of the innovation process, with the goal of piloting a solution in the field in 2018 (see Fig. 1). During these course of these events, there were several companies who got involved in the project. This section will briefly describe the events as a part of the empirical context and introduce some of the companies involved.

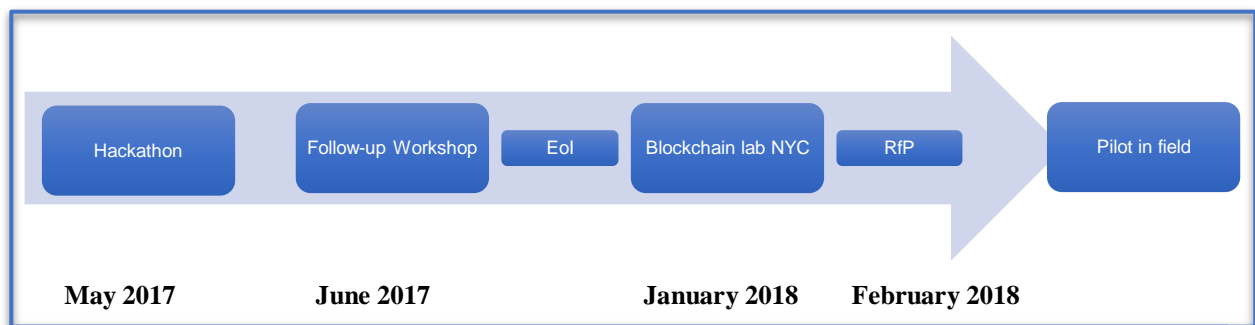


Fig. 4: Key events in the blockchain project

5.2.1 The hackathon

The first observation conducted was at the UN Women hackathon in Oslo. This event was part of the technology festival Katapult Future Fest, and was cohosted by UN Women, Innovation Norway and Katapult⁸. The hackathon was a 36-hour innovation contest. The organizers invited people to apply to join the hackathon through social media, and

⁸ Katapult is an accelerator program based in Oslo. They organize the Katapult Future Fest each year, which is a festival focusing on technology and social impact.

approximately 40 participants were selected to join. The day started with opening speeches from UN Women, Katapult and Innovation Norway. After the speeches, the “US Blockchain company” entered the stage to educate the hackathon participants about blockchain technology, the Ethereum Platform at Bitcoin. The participants were then divided into teams; some of the participants had created teams in advance, and some individuals also joined in some of the pre-created teams, or they created new teams. One team also joined remotely from Trondheim. The section below will introduce some of the companies involved in the hackathon and the following events.

Company 1

Company 1 became part of the blockchain project through participating at the hackathon in Oslo. They were not established as a company before attending the hackathon. However, the team had an initial idea, and developed this during the hackathon with the help of others who joined the team. The company develops a solution where people can transfer money to relatives or others living in the developing world by locking the money into goods and services, solving the issue of mismanagement of money. Company 1 was one of the winning teams at the hackathon, and was also invited to the follow-up workshop, and later invited to come to the blockchain lab in New York as observers.

Company 2

Company 2 also saw the light of day after participating in the hackathon in Oslo. They joined as a team of individuals coming from the blockchain community in Norway. They decided to take their idea further and establish a company after the hackathon. They are developing a solution where refugees can record and verify their skills in an online blockchain platform with the aim of fostering learning and entrepreneurship among people in displacement. Company 2 was one of the winning teams at the hackathon and were invited to come to the follow-up workshop and the blockchain lab in New York as observers.

Company 3

Company 3 did not participate at the hackathon, but they were connected to UN Women through Innovation Norway. Innovation Norway introduced Company 3 to UN Women at the time of the hackathon, and they kept in contact since then. Company 3 has a more mature solution than company 1 and 2. They have been established for three years and are currently

operating in several markets in Asia and Africa. Company 3 has a digital wallet solution that uses blockchain technology on top of the bank system to cut transaction costs and make the payments faster in order to bank the unbanked population in developing countries. Company 3 were also one of the seven companies who were accepted to live test their solution at the blockchain lab in New York.

Company 4

Company 4 is an established technology company who put together a team for the hackathon. They also made sure to have people who understood the problem area on their team. They had a person from Bærum Kommune joining their team, and two representatives from Save The Children Norway. Company 4 was one of the three winners at the hackathon. They did not want to push their idea forward, and they have not been in contact with UN Women since they received the link to fill out the Expression of Interest form (EoI) to apply for the blockchain lab. They decided they did not have the time and resources to attend the lab.

“US Blockchain Company”

The “US Blockchain Company” engaged in the blockchain project through being one of the organizers of the hackathon in Oslo. The “US Blockchain Company” helped design the hackathon, and provide the participants with mentorship during the hack. The “US Blockchain Company” is one of the leading companies in the Ethereum field in the US, and has a branch working with social impact. A part of this work is helping and educating humanitarian organizations about blockchain technology and how it can be leveraged in humanitarian contexts.

At the hackathon, the participants were presented with three challenges:

1. Taking into account a lack of access to smartphones, develop a “Smart Wallet” prototype, which improves aid workers’ and beneficiaries’ access to money, goods and services.
2. Develop a decentralized identity management prototype which can help people recover/establish their identities and maintains data privacy and portability where needed.

3. Quick access to recovery/employment opportunities and camp safety management.

The teams chose to work on one or several of the challenges, and in the end of the hackathon they were going to pitch their ideas to a panel of judges from UN Women. The teams were told that the winners of the hackathon would get several prizes. Among the prizes advertised was the opportunity to present their solution at the main stage at Katapult Future Fest in front of the Norwegian Crown Princess and many influential impact investors. In addition, there was a possibility for funding by UN Women for further development of the presented solution (Facebook Event 2017 URL).

Mentors and fields experts were available to the hackers in an informal manner throughout the hackathon, and they also gave small lectures and motivational sessions during food breaks. The “US Blockchain Company” contributed in creating the hackathon challenges and provided the participants with technical mentorship throughout the contest. At the end of the hackathon, the panel of judges named the teams of Company 1, 2 and 4 the winners of the challenge. After the hackathon, Company 1 and 2 were formally established as companies to take their ideas further.

5.2.2 Follow-up workshop

The second key event of the blockchain project was the follow-up workshop in Oslo. About a month after the hackathon, UN Women invited the winners from the hackathon (Company 1, 2 and 4) together with Company 3 for a follow-up workshop in Oslo. Company 4 decided not to continue their contact with UN Women at this point because they did not have the time or the resources, so they were not present at the workshop. At this meeting, Company 1, 2 and 3 presented their solutions and what they had been working on since the hackathon.

UN Women explained that the mission of the meeting was to see how far the solutions had come since the hackathon, and to map out what are the next steps towards a proof of concept for the different solutions. After seeing the presentations from the companies, UN Women explained that they were first thinking that the next step was to do a pilot on the ground in a humanitarian setting, but that they had decided to do a live testing of the blockchain solutions in New York instead. The aim being to develop the solutions further in order to be able to make a greater impact on the ground. They said that they would like to invite one person from

Company 1, 2 and 3 to join the live testing that was going to take place sometime the following fall (2017).

5.2.3 The blockchain lab

The third key event of the first phase of the blockchain project was the blockchain lab, which was a live simulation and testing of blockchain solutions at UN Women's headquarters in New York City. To invite relevant companies to the event, UN Women sent out an Expression of Interest form (EoI), which is a UN procurement document that invite companies to express their interest in planned solicitations. Usually in the EoI process, interested companies fill out an online form that explains their solutions, and the UN agency can choose to continue the dialogue with the companies that have the most relevant and cost saving solutions. The blockchain lab was a part of such a procurement process. However, instead of collecting information about the companies only through documents, UN Women chose to create an event where they could see the solutions being tested, and also get input and evaluations from other UN agencies and the public. UN Women received the EoI forms from a number of companies, from which they chose to invite companies with the most mature solutions that they thought had the greatest potential to work on the ground. There was a total of seven companies who were invited to the lab, and Company 3 was among these. Company 1 and 2 did not make the cut, since UN Women decided to look for more mature solutions that could be ready to pilot on the ground in short time. However, Company 1 and 2 were invited to join the lab as observers.

The blockchain lab lasted for 4 days. It started with a VIP reception with opening speeches, food and mingling where ambassadors to the UN, high-level UN representatives, academics and CEO's were invited to see the lab and take a sneak peek at the solutions. At this event, Company 1 and 2 were invited to do a short pitch on stage in front of the VIP guests. After this opening event, the testing comprised of two parts: Part 1 was the public facing lab where the companies showcased their solutions in front of invited participants from the UN, NGOs, member states and private sector. The lab was designed as a maze. The participants were divided into groups and provided with a score card so they could give feedback to UN Women about the different solutions. There were seven companies inside the maze, showcasing their solutions to the groups of people coming through. The groups had ten minutes with each of the companies before they had to move to the next company. Throughout the day, there were three sessions like this with three batches of people who

worked their way through the maze, and handing in their score cards to UN Women at the end.

Part 2 of the lab was a private “deep dive” evaluation of each of the seven solutions by a joint UN evaluation panel. This part was confidential. I was therefore not allowed to observe this part of the process, but I learned about it through interviews after. The selection panel consisted of four groups: One group with experience from humanitarian and development settings allowing for a realistic assessment of what works and does not work in the field. In this group, they had UN Women representatives from the country offices of Afghanistan, Jordan, South Sudan, Burundi, Nigeria and others, and the humanitarian advisor from South and East Africa. The second group focused on the companies’ business models, the third group focused on the technology allowing for a realistic assessment of the maturity of the blockchain technology solution, and the fourth group dealt with legal issues.

The overall goal of The Blockchain Lab was to identify a small number of solutions that could potentially be piloted in the field in partnership with UN Women in the spring 2018. The event also had the objective to facilitate mutual learning between the UN and blockchain companies to increase the links between industry tech products and women in humanitarian contexts.

The solutions selected by the evaluation panel to be most viable for field testing, were invited to respond to a Request for Proposal (RfP) for field testing in a selected location(s) where UN Women has operations. This happened short time after the lab. The next step for UN Women is to choose one or more companies from the RfP to partner with to do the pilot, and finally to conduct the pilot.

Based on the observation of the events, informal conversations with the participants and organizers, interviews and content analysis of relevant documents, the analysis identified some themes that were central for UN Women and the companies in the evolving process. The following section will present the research findings. The findings are divided into two chapters because this case study has investigated two research questions.

6 Research findings, part 1: The evolving relationship between UN Women and the companies

This chapter will present the research findings from the analysis that address RQ1: How does the collaboration between a humanitarian organization and private companies emerge and unfold in the early phase of radical, high tech innovation processes?

First, the analysis will use the pathway term to identify the main layers of activities of UN Women in the blockchain project. The research findings showed that the two pathways evolved simultaneously and were somehow interconnected (see Fig. 2). Pathway 1 was to build a blockchain capacity internally in UN Women, and pathway 2 was to find a private sector partner.

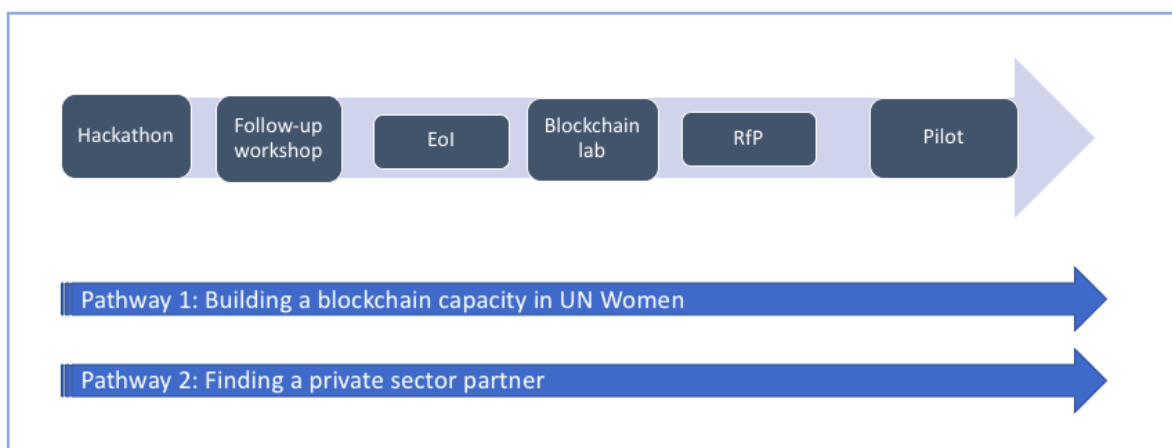


Fig. 4: The co-evolving pathways of the blockchain project

6.1 Pathway 1: Building a blockchain capacity in UN Women

The first evolving pathway in the blockchain project was UN Women's process of building a blockchain capacity inside their own organization and learning how blockchain can be leveraged in humanitarian contexts. This pathway started before they had decided to do the project, and the pathway evolved throughout the entire first phase of the project investigated in this thesis. Pathway 1 involved exploiting the knowledge already existing inside UN Women, and exploring knowledge, expertise and capabilities in other UN agencies and the private sector. According to Noteboom (2000), exploitation is needed for organizations to

survive in the short term, but exploration is required to survive in the longer term. Hence, the literature argues that a combination of these two ways of organizational learning is required to survive now and in the future.

6.1.1 Exploiting internal knowledge in UN Women

In order to learn more about the technology and the field of application, UN Women leveraged the knowledge across their organization. As mentioned in the previous chapter, the UN Women innovation unit is an independent unit working across all of UN Women's country offices, units and programs – which they also did in the blockchain project. One informant in the innovation unit mentioned that especially the IT department has been very engaged in the blockchain project and eager to learn:

Of course, they have really come to the table, really come on board, super interested, really contributing on the programmatic side which is fantastic. They have gone on programmatic missions to Mali and done different projects, which is fantastic, and they are doing this out of interest really. (UN Women 1)

In the blockchain project, the innovation unit, the humanitarian unit and the IT unit in UN Women work together. The humanitarian unit has the implementing responsibilities because they have the in-depth knowledge about the issues for the women in fragile contexts and how the technological solutions can fit into their country programs. The innovation unit supports the innovation process in terms of the proposal of development formulation, and when it comes to the implementation they provide quality assurance, technical support, and makes sure that knowledge and learnings are captured and shared.

During the hackathon, which was the first event in the project, UN Women leveraged their own expertise about women in humanitarian settings to provide the hackathon participants with knowledge about the conditions on the ground to generate new ideas:

Before the hackathon we were thinking how to bring more ideas of the ground to the hackathon. So, we worked with communication to bring along the videos and the photos. And also, we had secured some online support from colleagues. Whenever there was a question during the hackathon we could ask colleague from Egypt or from Jordan to answer the detailed questions. Like how it looks like in a refugee camp or something like that. I talked to one of the winners and he said he benefited a lot from our sharing, because he said without this hackathon they would have no idea of what was going on, on

the ground. I think some of the facts will help them gauge their ideas, and also inspire them to be more adaptive to the needs on the ground. (UN Women 2)

UN Women also leveraged internal expertise at the follow-up workshop, where a representative from the country office in Jordan was present because they were thinking of Jordan as a possible site to test the blockchain solution. Later on in the process, they also included representatives from many different divisions and country offices in the blockchain lab and deep dive sessions to evaluate the different solutions. Thus, findings suggest that bringing together representatives across UN Women's offices and divisions when developing a blockchain solution for humanitarian settings was important to gain region-specific information as each crisis and each region has its own unique issues.

6.1.2 Leveraging the blockchain knowledge across the UN ecosystem and the private sector

To increase their own knowledge about blockchain, UN Women also started mapping and learning from existing relevant blockchain based initiatives led by other UN agencies like WFP, UNICEF and UNOPS. UN Women included them throughout the blockchain project:

We are in constant communication with sister agencies about their blockchain development or exploration. That is one thing. For example, with UNOPS and UNICEF, and even for the test event or for the expression of interest we invited our colleagues from sister agencies to join the evaluation. So, we hope we are exploring in a collaborative manner. (UN Women 2)

Everything we do is in partnership with other UN agencies because we are a small agency, and we really need to amplify our effect by working in partnership with others. (UN Women 1)

As one can see from the quotes above, UN Women is a small player in the UN. They therefore need to work across agencies to have a greater impact, and that is why they have included other agencies in the blockchain project. Other agencies have been included in the hackathon, in creating the EoI document, in the process of planning and executing the blockchain lab and evaluating the different solution presented at the blockchain lab, and some came as viewers to test the solutions. After the lab, other UN agencies also participated in evaluating the Request for Proposals (RfP) they received from the companies.

Since UN Women does not have any blockchain expertise in house, they also partnered with the UN Office for Information and Communication Technology (UN-OICT) and the Digital Blue Helmets who have some expertise on blockchain:

Now we're also partnering with the UN office of information and technology. They have a unit called the Digital Blue Helmets, that has blockchain experts there, and they are supporting us by providing technical expertise. (UN Women 1)

Findings suggest that as a UN agency, UN Women has great access to projects driven within the UN, many on the forefront of innovation in humanitarian contexts which is an advantage in being part of such a big organization.

Another topic that came up in regard to leveraging expertise in other UN agencies and the private sector is the informal blockchain group initiated and lead by UNOPS. After discovering that UNICEF, WFP and UN Women conducted different blockchain initiatives, a UNOPS representative reached out to get a better understanding of the work being conducted. UNOPS together with UN Women, WFP and UNICEF established the informal blockchain working group that consists of individuals, and not agencies. The group is open to anyone from different UN agencies who are interested in how blockchain can be leveraged in humanitarian and development settings. The UNOPS representative interviewed emphasized that he tries hard not to make a formal structure of the group because he believes that innovation comes from individuals and not organizations. The fact that a big UN entity tries not to make a formal structure may signalize that innovation may be constrained in formal structures in the UN.

The word about the group spread throughout the UN, and other UN agencies wanted to get involved. It started with three people, and at this time, there are over 120 individuals in the group. The group meets regularly to discuss blockchain technology, and to share experiences and information:

We started thinking about forgetting about traditional competition among UN agencies. There's no point. We are so early stage, let's try to exchange our opinions. We have a lot of lessons, let's exchange lessons. Let's see what is going to happen. This is so foundational. It's not time to compete. (del Castillo 2017 URL).

The group also invites blockchain companies and other guests outside of the UN to discuss possibilities for applying blockchain technology in the UN.

So, from time to time we'll meet with private sector and different blockchain startups. We exchange in-depth questions, Q&A with them to know about their business model, their technology and their next steps. And we discussed a lot of ideas. Not all of them were moved to the next stage, but it is also very helpful to review all these possibilities. (UN Women 2)

This was interesting and educational in the beginning, but not a very efficient way of gathering information, according to the UNOPS representative. So, in April 2017, the group of 8-9 UN agencies who were regularly attending the blockchain meetings decided to send out a joint Request for Information (RfI) to the industry. The RfI is a procurement document that invites the industry to share information about their solutions and technologies with the UN. This suggests that it was not so easy to keep the informal structure of the blockchain group, and that innovation in the UN can be more efficient when formalized. They received 70 responses to the RfI, which is an unusually high number in the UN. The UNOPS representative emphasized that they usually get five or maybe ten responses to such requests. The group shared these 70 company documents with the UN agencies who were interested, and it was up to the individual agency to contact relevant companies. They also invited companies located in New York to come to the UN offices to explain more.

When asked about other ways UN Women collect information from the private sector, a representative from the UN Women innovation unit said that she tries to keep up with the industry by talking to her friends and connections from the private sector that she accumulated from her previous work to keep up with the development. She also reads a lot of relevant research articles and subscribes to blockchain and innovation magazines in order to learn more about previous projects that has been done on blockchain, and also mistakes that have been made in the past.

The research findings further showed that the hackathon was also a way for UN Women to learn more about blockchain technology, and also learning what companies and solutions were already out there.

In order to get a better understanding about what it is and what it could be, we came up with the idea to do a hackathon which could help us understand what possibilities lies in the technology, but also to see

who.. what types of companies are out there (...) I think we hoped to have a better understanding about what blockchain was after the hackathon. And we did! And a greater understanding about what possibilities lies in the technology, which I also think we gained. (...) So, we also envisioned that it would be a learning process. And the hackathon was that to a great extent! (UN Women 4)

To capture the learnings from the hackathon and the rest of the innovation process, an assessment report was produced by UN Women.

6.1.3 Producing an assessment report to capture knowledge

When UN Women received funding from Innovation Norway, a part of that funding was spent on hiring a blockchain expert, and the production of an assessment report. UN Women hired “Peter” who is an external consultant on blockchain technology who would help UN Women understand the technology and write the report to map out the blockchain space and how the technology could be leveraged in humanitarian contexts. The empirical evidence showed that the assessment report was an important tool for UN Women to build their internal knowledge about blockchain technology and the areas of application, and also to decide on how to move the process forward:

I think the report was a really helpful way to help us outline our strategy by just putting on paper what is happening in this area. It’s so new.. What are the different partners doing, and also to look at the issue from a humanitarian perspective: what are the issues that women have, where can blockchain come in to really help and provide a solution to some of these problems. (...) So that approach, and to have the time to do that report and think some of these issues through was very valuable and has helped us make the decisions we have in terms of how we move forward. (UN Women 1)

This section has presented the research findings on how and why UN Women leveraged the knowledge and support in UN Women, in other UN agencies, from the help of an external blockchain expert, and from the private sector to build their blockchain capacity internally. The research findings showed that building this internal capacity was also a way to manage risk in the project, which the thesis will analyze and discuss further in the “Management of risk in the IOR” subchapter. The following section will present and discuss the second evolving pathway in the blockchain project which was the search for a private sector partner.

6.2 Pathway 2: The search for a private sector partner

The second pathway in the blockchain project was UN Women's search for a partner to conduct a pilot with, and the evolving relationship between UN Women and the companies involved in that search. The research findings showed that pathway 1 and 2 were interconnected because UN Women's process of building a blockchain capacity internally involved reaching out to companies and startups to learn more about the technology and the existing solutions. Further, the search for a partner also involved increasing their knowledge about the technologies and the different companies to minimize risk. This finding is also in line with the findings of The Minnesota Innovation Research Program where the authors state that the innovation processes were not simple, but consisted of many different, parallel, divergent and convergent paths in which some were related and some were not (Van de Ven et al. 2008).

The three key events observed in this thesis were important parts of the two co-evolving pathways. The following section will discuss the evolving relationship between UN Women and the companies in relation to the analytical terms in Ring & Van de Ven's (1994) model for cooperative IORs.

6.2.1 The emergence of a cooperative inter-organizational relationship

Cooperative IORs may emerge out of various starting conditions such as friendships, institutional mandate or "*resource dependence and search by one organization for another party with the needed resources*" (Ring & Van de Ven 1994: 100). The research findings showed that in the UN Women Blockchain Project, the IOR emerged because UN Women was dependent on the expertise and technical capabilities in the private sector to develop a blockchain solution for humanitarian contexts:

In terms of the platforms and solutions we are looking to develop, we are looking for private companies and startups. (...) So, we in UN Women don't develop blockchain platforms or anything like that. That is not something we have the capabilities to do. For us, it is important to work with innovation, but there are other actors who are way better to develop them. (UN Women 4)

The companies on the other side, did not feel dependent on UN Women's humanitarian expertise per se, since the companies had some expertise on humanitarian issues within their teams. They did however see great value in being associated with UN Women:

I think being able to say that we are working within UN Women will give us credibility. (Company 1)

Company 2 was also hopeful to what doors a collaboration with UN women could potentially open into the humanitarian system:

There is great value in terms of what doors it can open in the humanitarian world. It is a system.. They have their ways of working and they have survived that way for a very long time. So, if you come in as a stranger saying “hey, I have this cool idea”, it will most likely not work. (...) And I realized pretty quickly that there was no funding in this, as we had hoped for. But then it is the networking and getting new connections and such. And that is very valuable! It is very valuable, and I wished there had been more of that. (Company 2)

When speaking to company 3 at the blockchain lab, they emphasized that even though they already are present in several developing countries, they would benefit from working with UN Women. The reason being that UN Women have a better overview and expertise on cultural differences and such. The research findings further showed that all of the companies were working on their solutions and planning to go out in the market regardless of the collaboration with UN Women, but that such a collaboration would make it easier for them to navigate the humanitarian system. These findings are in line with Dahan et al. (2010) who found through several case examples that companies and NGOs bring different capabilities, strengths and resources that when they work together can create social and economic value that would otherwise be inconceivable. It is interesting that from UN Women’s side, they are more reliant on private companies’ skills and expertise, while the companies are drawn to UN Women not only for their knowledge about humanitarian crises and insights into the conditions on the ground – but the value of networking, connections and the credibility of being associated with a UN agency. This is an interesting trade-off and motivation to start a partnership process.

Now that the rationale for the establishment of the IOR between UN Women and the companies has been presented, the thesis will elaborate on the different stages in the evolving relationship. Ring & Van de Ven’s (1994) process model is a repetitive cycle of negotiations, commitments, and executions stages. As the authors state, these stages overlap throughout the development of the IOR, which the research findings in this thesis also confirmed. However, these stages are separated in this thesis for analytical purposes.

6.2.2 Negotiations stage

The hackathon was the first interaction between UN Women and some of the companies that was going to be further involved in the blockchain project. The hackathon can be seen in relation to the negotiations stage in Ring & Van de Ven's (1994) process framework. According to the framework, this stage is where the parties develop joint expectations about their motivations, uncertainties and possible investments that they are considering undertaking jointly through formal bargaining or informal sense making (Ring & Van de Ven 1994: 97).

The interview data showed that having fun, collaborating, coming up with new ideas and learning more about blockchain technology and the refugee situation was important motivations for the hackathon teams at this stage. For UN Women, learning, creating ideas and visibility were important motivations at the time of the hackathon. They wanted to learn more about the technology, and also what type of solutions exist. Visibility was important for UN Women at this stage because they also wanted to be an actor in the blockchain space:

So, I think we envisioned a learning process. And we also wanted to be an actor, right? And you can say that the hackathon in Oslo put us on the agenda in regard to blockchain technology. And I don't think we had expected that. But it turned out that was because there was so much attention around it. (UN Women 4)

Findings further showed that there was communication around expectations about the parties' motivations, uncertainties and possible investments in the project, but in a very informal and superficial manner. The data did not find it to be development of *joint* expectations, but rather *individual* expectations. A formal partnership and a possible procurement from UN Women's side would have to go through an official UN procurement process, so there was no point or room for UN Women to develop any joint expectations or real commitments with the hackathon teams at this early stage of the process. The hackathon was an informal event consisting of both companies and individuals divided into different teams, and there was no explicit bargaining between the teams and UN Women at this point, but rather an informal sense making as suggested by Ring & Van de Ven (1994: 97).

The hackathon was a way for UN Women to kick-start the innovation process, and to learn more about the technology and what solutions exist, and to start generating new ideas. The observation of the hackathon showed that UN Women communicated to the hackathon participants that their expectation and goal with the hackathon was to come up with new ideas, and some of which they would *consider* bringing forward, and that there *might* be some funding for that. So, there was communication on UN Women's expectations for the event, but not on their expectations for the further development of the ideas after the event, and there were no actual commitments from UN Women this early stage. They were open about the fact that this process was new to them, and that they were not exactly sure what they were looking for at the time of the hackathon. The companies did not commit to anything at the hackathon either, except from participating at the event and working to come up with solutions.

When speaking to the hackathon participants about their motivation to join the hackathon, some of them answered that they wanted to come up with solutions that could help refugees. Others were motivated by the fact that it was a UN agency who organized the event, which they thought gave the event credibility, and some wanted to learn more about blockchain. Some of the people in the teams had an expectation that there might be some funding involved for the winners, since that was announced as one of the prizes for the winning teams at the Facebook Event Page for the hackathon. As the data showed, some of the participants in the winning teams had expected a better follow-up process from UN Women after the hackathon, and they were confused about what UN Women was actually looking for: did they want to collaborate with companies, or individuals, or did they want to take the ideas further inside UN Women?

Is it individuals they want to get engaged with, or is it the winning teams that they want to engage with, and what's the process from there. I think in terms of that, they really have to, with the winning teams, put a follow-up process in place. (Company 1)

These aspects were perceived as unclear by the companies, so the data showed that the expectations of UN Women and the teams did not match due to unclear communication around expectations and motivations between the parties. The data further showed that it was not a goal or an expectation for UN Women to produce two new startups from the hackathon:

Initially the goal was to have developer create new prototypes in the area of identity and cash transfer, and other ideas that could be used in humanitarian contexts. And I don't think the goal was really to

produce a couple of startups out of the hackathon. That wasn't initially the goal, but it surprised us beyond all belief. It's just... How did that happen! You know, it was really pretty incredible. ("Peter")

So, for UN Women, it was a surprise that two of the projects from the hackathon went into startup-mode, and it turned out that they did not have the resources to nurture those relationships.

The establishment of trust

As established in the theory chapter, trust is one of the central terms in Ring & Van de Ven's (1994) model of cooperative IORs. They argue that these IORs will encounter two types of uncertainties: (i) uncertainties regarding future states of nature, and (ii) uncertainty about if the parties will be able to rely on trust to manage problems of adverse selection and moral hazards (Ring & Van de Ven 1994:93). The authors provide the following definition of trust, emphasizing the importance of interpersonal interaction and social bonds: "*Faith in the moral integrity or goodwill of others, which is produced through interpersonal interaction that lead to social-psychological bonds of mutual norms, sentiments and friendships in dealing with uncertainty*". (Ring & Van de Ven 1994:93).

The findings showed that the establishment of trust with UN Women at the negotiations stage was important for the companies. Since UN Women is a part of the UN-system, it became apparent that there was a certain reputation and a set of values connected to their brand, and that in turn influenced how the hackathon participants viewed UN Women in the beginning of the blockchain project. This was also found by Nooteboom (2002c) who notes that trust can also be present when a relationship starts, based on experience through earlier contact, reputation or shared norms and values. Some hackathon participants had an impression based on former interaction with the UN, or just the impression they had through UN Women's communication channels. Some of the companies expressed that they saw UN Women as a highly credible organization with good values, but that they also are a big organization with a slow bureaucracy.

Slow, bureaucratic and huge. Because I have done some projects in the past that had a connection to the UN. So, yeah.. Slow and bureaucratic and with the best intentions, but not always the best.. You can't control how things happen. But great values. (Company 2)

I've worked in government and politics, so I think I had the impression that like, yeah, they're a highly credible organization and all these kinds of things. (Company 1)

A person on the team of company 4 expressed little faith in the UN as a whole, but a belief in their ability to bring ideas from the hackathon forward:

So, I thought since it was the UN that there might some money. Budgets and stuff, to create these solutions that can help refugees. (Person on the team of Company 4).

As one can see, some of the participants had a good impression of UN Women where they saw them as a credible organization with good values which created a level of trust towards UN Women, but also trust that they were committed to actually find solutions to the challenges presented at the hackathon. Some informants also expressed their impression and excitement with the new and unusual combination of UN Women, innovation and blockchain and the way they tried to include private actors – which created a sense of trust:

And they are really trying to pioneer into something new, which I was really impressed with. You know, usually it takes governments and NGOs and agencies an awfully long time to do things like getting into emerging technologies. So I was kind of.. I was quite impressed with the fact that they've sort of took up that opportunity. (.....) I saw them as an honest organization that wants to innovate, and seeks to get that innovation from collaborating with startups and other organizations, and I think that to me is the whole mark of an innovative organization that is as large as the UN, or an agency. So I think that open-mindedness and that kind of mentality has really impressed me. (Company 1)

Just the fact that they took the initiative to organize a hackathon like that is great! It shows that they.. that they understand that they need to innovate bottom-up. (Company 4)

The impressions above formed the first impression of UN Women for some of the hackathon participants. The analysis did not find that trust was a theme that came up in the interviews with UN Women representatives about the hackathon in particular. There was, however, one informant in UN Women who had an impression that external partners are in general very eager to work with the UN because they value the name and the mission of the UN. She further pointed out that they need to work on a win-win way to facilitate these kinds of partnerships. On the other side, she expressed that it exists a lack of mutual trust between the UN and the private sector in general when it comes to establishing partnerships, and she emphasized the importance of the people working on these issues:

Yeah, I think also the trust. Both sides don't trust each other at the original. Although both sides have good ideas to work together, but to build this trust needs time. This is based on... the trust is based on the work, and also the personnel who is working on this. (UN Women 2)

During the course of the hackathon and the time following it, the level of trust towards UN Women changed for some of the participants. Several of the informants pointed out that they were not sure how committed UN Women was to actually work to come up with new solutions, or if the hackathon was just an event to get positive publicity:

To me, it seemed like it is nice that people are thinking and solving problems, but I felt that people were busy with PR too. Right? People saying big words and "we're thinking this and that", but what problems have you actually solved? (...) You know, you work so hard to come up with a solution, and then there is no follow-up. But there was so much PR. (Person on the team of Company 4)

We just really felt that they were not interested in it for anything other than optics, and trying to look good. It didn't appear to us that they were actually interested in collaborating with the social entrepreneurs and helping people move forward, but they wanted to be seen as innovative, they wanted to be seen as supporting something cool as this, which is really unfortunate because I think that UN Women does genuinely want to do good in the world and I think that they have a lot of potential to do a lot of cool stuff. (US Blockchain Company)

As mentioned above, UN Women also emphasized that the visibility and publicity around the hackathon have been important for the project, although according to the informant, they had not thought of that beforehand:

We also wished to be an actor. Right? And you can say that the hackathon in Oslo put us on the agenda in terms of blockchain technology. And I don't think we expected that. But it turned out that way because there was so much attention around it. (...) It had that effect that we are now being included in those discussions and processes, and I think that was important. (...) So, that has given us the inspiration to continue that work. (UN Women 4)

The findings suggest that UN Women and the UN system carry a heavy and well-known name. With this follows expectations of being a serious player. This makes it important to have clear communication when establishing relationships with private companies. By doing this, the UN is better equipped to keep up their strong reputation, and still be an attractive partner for businesses.

6.2.3 Commitments stage

A few weeks after the hackathon, the winning teams and company 3 got an invitation to participate in a follow-up workshop with UN Women to share how far their ideas had come, and what were the next steps to get a proof of concept. When the companies got the invitation to the workshop, they got very eager to find out how they could continue the collaboration:

I was so stoked when I got that call. And I thought maybe they would provide us with some funding or be able to help us somehow. And then there were two other companies there, so I felt like we didn't get that much out of that meeting. I wish we had more time to work together. But I thought it was so awesome to get invited. And I think I got a little too hopeful about what doors it could open. (Company 2)

The follow-up workshop can be seen in relation to Ring & Van de Ven's (1994: 98) *commitments stage*. According to the framework, the commitments stage is when the parties in the IOR commit to future action through a formal legal contract, or through a psychological contract. They also reach an agreement of obligations and rules for future action in the IOR. The observation of the workshop showed that there was no legal or formal contract that came out of the meeting. However, there was an informal psychological agreement that UN Women would invite the winners from the hackathon and Company 3 to a blockchain live testing lab in New York, which signaled to the companies that UN Women was still interested in their solutions and that they might take them forward. This meeting was in June, and UN Women said that they aimed to do the lab the following fall.

The research findings showed that the period of time between the commitments (follow-up workshop) and executions stage (blockchain lab), was particularly important for the development of the IOR. At the commitments stage, the parties agreed that UN Women would invite the companies to New York that fall. UN Women had first suggested to do the blockchain lab in September, and then the beginning of November. The interviews with the companies were conducted in October and November, and at that point they still had not heard anything from UN Women regarding the blockchain lab. The period of time between the commitments and executions stage cast a negative light on the IOR because of the lack of communication, clarification of role responsibilities and engagement from UN Women:

And we have emailed with Innovation Norway about what is happening with this New York thing. Because we were told that we were going to be invited to this thing in New York. I have sent five emails to “Peter” about this too. So, I see a great potential to improve the communication. I can be pretty clear on that. And I would like to get much more clarity in what they want to use us for and what they want to do with us. If they want to do something with us at all, and that kind of stuff. (Company 2)

The companies also reacted to the mismatch of what was communicated at the workshop and the lack of a follow-up from UN Women in the time after. This led to a doubt if the blockchain project was a high priority in UN Women at all, which affected the level of trust in the project:

Because they communicated that when they came back to Oslo for the follow up workshop that “we are dependent on projects like these moving forward, and we are very excited”. But then we don’t hear anything. And months pass by, and we do a lot of work, and we are pushing to get out in the field and go high speed. (Company 2)

Well, I mean we haven’t heard from them yet. But that’s not to say that we might not hear from them. So, I think, if it was a super high priority than they would be in action now. (Company 1)

Finally, the companies received an email from UN Women with a link to the EoI document – which the companies did not understand. What is interesting in the quote below is that the informant points out that this type of communication may not be the best way to reach startups, and yet this is the standardized way that UN agencies have to operate when engaging with the private sector. This may signalize that the UN is more used to working with large, established corporations:

But we received this EoI. But it was not written in a startup-friendly way, so to speak! It’s like endless descriptions with tons of legal specificities and stuff. (...) If they were aiming to reach large corporations and big software houses, then I think it might work that way. But if the aim was to go bottom-up, I don’t think that was the right way to do it. (Company 4)

Two other informants from the other winning teams also thought that the EoI-mail was spam. After finally sending in the document, there were uncertainties if they were going to be accepted to the lab or not as the document stated that mature solutions that are ready for field testing would be given preference.

The trust in UN Women was further contested when UN Women made a faux pas when they sent out the invitation to reply to the EoI. They sent it out to a big number of companies, where all of the receivers could see what other companies had been invited to reply to the EoI. This was in one way just a simple mistake. Somebody just copied the email addresses into the wrong field in the email. On the other side, it was a serious mistake that gave away information about the competition in the EoI process. One informant said that this error was talked about among the companies, and that some companies were hesitant to keep working with UN Women because they were afraid that they were going to accidentally share their ideas with others.

6.2.4 Executions stage

The blockchain lab can be seen in relation to Ring & Van de Ven's (1994: 98) executions stage. According to the authors, this stage is when the commitments made by the parties in the commitments stage are taken into action. The research findings showed that the commitments that were informally agreed upon at the follow-up workshop were not executed in full at this stage, but were slightly modified.

UN Women had first communicated to the Norwegian companies that they were invited to participate in the live testing of the blockchain solutions. When the companies had sent in the EoI document, Company 1 and 2 were not accepted to participate in the lab due to UN Women's decision to go for more mature solutions that were ready to be tested in the field within short time. Innovation Norway suggested that UN Women should invite the hackathon winners to the lab as observers: *"I suggested that they could invite the hackathon winners to the lab as viewers. It was at "patch on the wound" for the companies, but for me it was important to say that we wanted them to get to learn and follow the process further"* (Innovation Norway representative).

A while after the EoI had been sent in, UN Women chose to invite Company 1 and 2 to come to the event as observers to provide them with networking and learning opportunities, as suggested by Innovation Norway. Company 1 and 2 were a bit confused and disappointed that they were not accepted to the lab, but they did appreciate being invited as viewers. At this stage, Company 4 chose not to continue being part of the project.

Inviting the winners to come to the lab as observers was a way for UN Women to meet the companies half way, and not break their commitments entirely. However, when speaking to Company 1 and 2 after the lab, they did not feel that they got that much out of being at there as observers. At the VIP reception the night before the lab, the two hackathon winners got to pitch their solutions in front of the audience, which they thought was valuable. On the day of the lab, UN Women introduced Company 1 and 2 to the first group of people going through the lab, but did not introduce them to the following two batches of people entering the lab. Company 1 and 2 did not have their own stand, so the people who visited the lab had no way of knowing who Company 1 and 2 were, and why they were there.

At this stage, Company 3 took a bigger role in the blockchain project. They were among the seven solution providers that were accepted to the lab to live test their solution in front of the audience, and participate in the “deep dive sessions” the days after the lab. When speaking to Company 3 at the lab, they had a very positive experience with the interaction and communication with UN Women, and said that they experienced them as very interested, supportive and collaborative. Findings suggest that UN Women might be better at communicating with companies with more mature solutions that they want to continue to work with, and that they struggle more to communicate in an open and honest way to the companies that they do not want to continue collaborating with.

6.2.5 Assessments based on efficiency and equity

The IOR framework suggests that each of the negotiations, commitments and executions stages are assessed based on efficiency and equity. The authors define efficiency as “*the most expeditious and least costly governance structure for undertaking a transaction*” and equity is defined as “*fair dealing*” (Ring & Van de Ven 1994: 93). As emphasized by Ring & Van de Ven (1994), equity is when there are fair rates of exchange between costs and benefits for the parties involved in the IOR. So, equality is not necessary for fair dealing, but it implies that all parties get benefits that are proportional to their investments.

During the development of the IOR, it became clear that equality, meaning that you get back the same amount of value as you put into the collaboration, was not necessary for the further development of the relationship (Ring & Van de Ven 1994: 93). In this project, UN Women saw value in learning about the technology from the companies as a means of building a blockchain capacity internally in UN Women. The companies on the other hand, invested

time, resources and efforts to be part of the hackathon, and they were eager to learn more about the end users, which in this case are the women and girls in displacement. There were however different opinions about to which degree UN Women provided the participants with this knowledge. This signals that the companies did not feel that there was “equality” in the process.

So, within our groups I think we had that expertise which was really fortunate because otherwise, just sort of the overall stats probably wouldn't have been enough to be able to come up with a solution to their problems. (Company 1).

There was some information.. but they could have given us more. And more in-depth information about things. (...) But we got to know more when we talked to different people, and I guess that's how it works (...) But they had people approaching us along the way. Both UN Women and others. And we had some great dialogues with them (Company 2).

Eh, I think they definitely probably spent five or ten minutes talking to teams. I don't think that's enough to really hand over information necessary to help teams work on stuff like that.....eh... which is unfortunate. (US Blockchain Company).

The companies also put in a lot of effort to develop their solutions after the hackathon and try to keep in contact with UN Women, which turned out to be difficult. When the companies experienced that there was no funding or a real follow-up process in place, the companies still saw great value in being a part of the project because of all of the attention they received after winning the hackathon, and they were hopeful in what doors that could open in the humanitarian world. This may signalize that they experienced “equity” or “fair rates of exchange” rather than equality.

But I think in terms of difficulties, I mean, the opportunities that's come as a result of the UN Women blockchain hackathon has by far outweighed any of the difficulties. So, from the media attention, from investor meetings- these kinds of things have followed up afterwards. (Company 1)

However, as the process evolved, the companies did feel a bit “used”. This was especially after the blockchain lab. They did not seem to want to work with UN Women after this. Findings showed that as the process evolved, they companies did no longer feel that there were fair rates of exchange in the collaboration.

In regard to assessments based on efficiency, an informant from the UN Women team expressed that they wanted to go for more mature companies and solutions instead of the ideas from the hackathon. This assessment was based on efficiency, because the goal was to conduct a pilot in the field in the beginning of 2018, so they needed to find a partner that had a mature solution and had gone through a proof of concept in order to reach that goal.

So, originally, we were looking for company that could develop something for us. But after the hackathon, we found out that there are so many companies in this space already, and that the best and most efficient way for us is to try to find the companies who have the best solutions and to work with them in the field to try to improve their existing solutions so they can work for women and girls. (UN Women 4)

Findings showed that this efficiency assessment made it difficult to continue nurturing the relationships with Company 1 and 2.

Well, I realized they didn't have a structure to foster numerous projects. That's why I landed upon the blockchain lab idea. And we just haven't really had the resources and bandwidth to deal with Company 1 and Company 2 as we would like to. We needed a company with field experience that we could take into a refugee context in 2018; a team with a blockchain technology that had been tested ideally with women refugees. ("Peter")

For the companies, findings showed that in the end, it was not very efficient for them to continue working with UN Women either. Informants from the companies expressed that they thought UN Women was a slow-moving organization, while they as startups were faster, and much more flexible. This was also confirmed by UN Women representatives:

I think industry tends to be more flexible, especially with startups, in executing one idea or one project. But in the UN, we have a lot of legacy in operational procedures. A lot of operational barriers, like how to engage with the private sector, how to innovate in the procurement system, all this, and how to streamline a legal process when engaging the private sector. All of this needs a lot of effort. (UN Women 2)

Even though it was not efficient for them to continue the collaboration, companies expressed that they still wanted to continue being part of the project in the beginning. One explanation for why the companies still chose to be part of the project even though it was not very efficient is the other types of value that came along as a result of being a part of the blockchain project. Other types of value is the credibility of being associated with a UN

agency, the media attention and the contact with UN Women's global network. As the process evolved, and they started to feel that the exchange of value was neither efficient, nor fair, the collaboration ended.

So far, we have seen that UN Women and the companies made assessment based efficiency and equity throughout the process, and that the companies' assessments of efficiency did not weigh as much as the value they gained from being part of the project. These assessments shaped the innovation process. Originally, UN Women's plan was to do the hackathon, then get different companies to reply to the EoI, and based on that choose one or more companies to do the pilot in the field. The efficiency assessment shaped the process in the sense that UN Women decided to do go for more mature solutions and test them in the blockchain lab format in New York before taking companies out in the field in a fragile context. This assessment was based on efficiency, as we have seen above, but also on *risk*.

6.2.6 Managing risk in the IOR

Research findings showed that there were different types of risk connected to the blockchain project. UN Women put various mechanisms in force to manage these risks, which in turn shaped the development of the IOR and the innovation process.

First, all of the informants in UN Women emphasized that there is great risk associated with the technology being so young. One example that came up is World Food Program's blockchain project. WFP picked one of the co-founders of Ethereum to partner with for the development for their blockchain solution. He was one of the people who wrote the Ethereum code in the first place, and he later created one of the most popular digital wallets called Parity. The Parity wallet was hacked, and someone stole over US\$ 30 million from the wallet. The informant explained this to illustrate that even if you pick the very best people to collaborate with, they can still make mistakes. It is because the technology is still so young, and because you can never guarantee that the company you choose to partner with will not make mistakes:

Blockchain technology is the blackest of the black boxes – it is extremely complex at some levels. The blockchain lab idea is to test various different ideas and technologies from different vendors. And it's very difficult! There's no way one can definitely say "we have the best vendor on the block!" I mean, how do you say that? Like... and World Food Program is the proof! (...) You might think that you have

the best technology in the world, but there is the possibility that it may be compromised! This is risky stuff! (“Peter”)

The first risk is the technology itself. It is new. We are not so sure whether it will work or not. (UN Women 2)

Second, UN Women representatives expressed that there are great risks associated with collaborating with the private sector due to the high percentage of blockchain startups who fail, and that there is also UN reputation on the line when collaborating with private companies:

There are risks around the private sector solutions, and there’s a question around the whole level of maturity. If you have seen some of the stats – estimates are that 90 percent of the blockchain startups have failed. (UN Women 1)

The second is, working with the private sector. There is UN reputation involved in this. So, we have to be cautious on this. And then the risk is.. I don’t know.. it is just like an experiment. It will fail or it will succeed. But from the innovation side, we should be more flexible to the result. The process, or the experiment in itself is more important than the result. (UN Women 2)

A third risk mentioned by a representative from the innovation unit is the user adoption. The users of the blockchain solution are non-technical. It is therefore a risk if they even want to be part of testing such a solution, and if the solution will be user friendly and safe enough. There is also great security risks involved in the pilot testing because they will test the solution in environments characterized by crisis and conflict, which demands a great deal of preparation from UN Women and the company they choose to collaborate with.

Findings showed that various mechanisms were put in force by UN Women to manage the risks in the blockchain project. These mechanisms were important for the development of the IOR because they controlled how the innovation and collaboration process evolved. The first mechanism was to work to increase their knowledge about the technology and learn from past mistakes: *“We just try to be comprehensive to minimize the risk. I think the more we understand, the less mystery we find (...) We need to learn about the technology itself and even the backhand.”* (UN Women 2).

This also underlines that Pathway 1 (the process of increasing the internal knowledge in UN Women) was interconnected with Pathway 2 (the process of finding a partner). UN Women took a long time to increase their knowledge, and thus the process got delayed. As mentioned above, the period of time between commitment and execution was challenging for the companies, since they were eager to continue the collaboration in high speed. This also affected the trust between the companies and UN Women.

The second mechanism to manage risk was UN Women's decision to change their original plan for the process when they decided to do the live testing in New York as part of a competitive process before taking a company to the field:

We've gone through quite a process to also select the solution. So, we've taken quite a long time to come to the solution, gone through a competitive process, and the lab is also a way for us to test it in a lab, then work with the solutions and really get to know them before we decide on who we go with. So, we can really try to go with a solution we feel is the most appropriate. (UN Women 1)

Third, following the guidelines for procurement in the UN system is a mechanism to manage risk (UN Org 2013). This is something that every UN agency have to work with in order to ensure fair competition and avoid corruption when exercising procurement. Thus, the assessments made by UN Women in the blockchain project were based on the procurement rules and guidelines in addition to efficiency, equity and risk. The United Nations Financial Regulations and Rules govern the procurement functions in the United Nations, and the blockchain project is part of such a procurement process. There is a procurement manual, which provide guidance on procurement procedure and policies to UN staff members who are involved in different stages of the procurement process. The manual states that the following general principles shall be considered when exercising procurement in the UN:

- Best value for money
- Fairness, integrity and transparency
- Effective international competition
- The interest of the United Nations.

(UN Org 2013)

Throughout the development of the IOR, research findings showed that the procurement process became an increasingly important topic for UN Women as the process evolved and got more serious and formalized. In relation to the hackathon, procurement was not a theme that came up in the observation or the interviews. It was first when UN Women sent out the EoI document after the follow-up workshop that procurement became a topic, because this was the first step in an official UN procurement process.

A forth mechanism to manage risk was to use the evaluation criteria at the blockchain lab to gather important information. A UN Women representative who was on the evaluation team during the lab explained how they used the evaluation criteria to gain as much information as possible from the companies in order do manage risk:

So I tried to gather as much information as possible so that we can have a more.. a comparative more complete understanding of the vendors we are going to select for the simulation event. So, I contribute from the evaluation side. I am also compiling or conducting the evaluation criteria for the test event. And I'll consult with people from sister agencies who either knows the technology or who knows the business side. (UN Women 2)

The lab worked really well as a procurement process because these are new and complicated things. So, if we only based our decision on documents we got from the different companies, it would be much harder decision. (UN Women 4)

After doing the “deep dive sessions” after the lab with a joint UN evaluation team, UN Women sent out the next procurement document, which was a Request for Proposal (RfP). In this document, the companies were to send in their proposal for the pilot testing, which was evaluated again by the evaluation team. The findings showed that involving many different UN agencies and other inputs throughout the procurement process was important for UN Women to be able to make an informed decision, and at the same time learn from those inputs and other use cases:

Because you need to understand it yourself and you need to learn from others. Maybe from other cases. From the news report, from the white paper or from research reports of the pitfalls of a failed pilot. So, you need to read them and you need to know them beforehand and then incorporate those perspectives into the evaluation. And into the following discussions. (UN Women 2)

When we made the decision on who we wanted to reply to the RfP, we had already had a very good process on what will work in the field. And we had representatives from UNICEF, ICT, WFP and UNOPS there, so many of the UN agencies working with blockchain technology participated in the evaluation. (UN Women 4)

This section has analyzed the evolving relationship between UN Women and some of the companies in the blockchain project in light of knowledge and learning, risk and trust, and Ring & Van de Ven's (1994) process model. The following section will build on the findings from this chapter to present factors that supported and constrained collaboration in the project.

7 Research findings, part 2: Supporting and constraining factors

This chapter will present the research findings connected to RQ2: What supports and constrains collaboration between a humanitarian organization and private companies in the early phase of radical, high tech innovation processes?

Findings showed that there were various factors that affected the collaboration in the blockchain project in a positive and negative way, which contributed to shaping the development of the relationship between UN Women and the companies. This section will present the research findings on what factors supported and constrained collaboration in the blockchain project.

7.1 Cupids brokering the IOR

According to Ring & Van de Ven (1994), some IORs may be brokered by venture capitalists, investment bankers or other sponsors acting as “cupids” between the parties. The research findings showed that there were two different cupids in the blockchain project who supported the collaboration by trying to build a bridge between UN Women and the companies.

Innovation Norway, which was the sponsor of the project, was one of the “cupids”. As mentioned in the introduction, the collaboration with the private sector is a precondition in the NOREPS grants for humanitarian innovation, and Innovation Norway’s mandate is to promote Norwegian businesses abroad and contribute to the growth of Norwegian businesses and industries. *“The private sector collaboration was one criteria connected to the grants. So... But, I think.. We have pushed that a bit. You have to when you’re doing innovation”* (Innovation Norway representative). Innovation Norway was therefore actively engaged especially in the initial phase with the hackathon and the follow-up workshop – trying to facilitate a good collaboration between UN Women and the Norwegian companies:

You know, the government always keeps some distance from the grants they provide. And I think that is not right in innovation (...) Firstly, the hackathon was our suggestion. (...) UN Women suggested to just hire a consultant to read for three months, right? And they did. That was the plan. But then “Heidi” said: why are you doing that? We have to have a hackathon to gather people and start the conversation! And then the Deputy Executive Director in UN Women was like “Oh my God, that is a beautiful idea!! Hehe.. They hadn’t thought of that. (Innovation Norway representative).

As the quote above states, Innovation Norway tried to create a place where people could meet and start talking together as a useful point of departure for an innovation process, and thus made sure that the private sector was engaged from the very beginning of the project. Innovation Norway also hosted the follow-up workshop, and suggested that UN Women should invite the companies to the blockchain lab as observers when they were not qualified to participate in the lab.

Research findings further showed that the blockchain expert “Peter” also took the “cupid” role in the project, working with UN Women on one side, and keeping in touch with the blockchain companies on the other side. It was observed by Obrecht & Warner (2016), and also in other work (Gray & Hettiarachchi 2014) that the clearest example of the need for translation is often in ICT-driven innovations that involves collaboration between humanitarians and the ICT sector. “Peter” had extensive experience from working with various large technology corporations, startups, incubators and accelerators, and also advocating for women’s enhancement in technology. The past years he has been working as an educator with the aim to create small projects which sometimes turn into startups. “Peter” therefore had the valuable experience of working with large corporations characterized by big bureaucracies on one side, and small startups on the other side, which turned out to be practical when working on the UN Women project.

So, my ability to work with startup incubators, accelerators and early stage seed funds and these things, really have given me the capability to come into this scenario and understand what motivates startups, you know, how they drive innovation, how they get funded and what are their game mechanics, how they incentivize their communities. (“Peter”)

“Peter” ended up taking on the responsibility of rehearsing the teams during the hackathon, and he established a good relationship with them through that initial interaction. He also took on the responsibility of keeping in touch with the hackathon winners in the time after the event because he understood that they wanted to keep in contact with UN Women, and that they might need some guidance. He turned out to be the person that the companies would contact if they wanted to share information, or if they had any questions. However, they did not see him as helping them through UN Women per se:

Peter, he has been really great! So, whenever we needed advice or suggestions from him he is like readily available on Twitter or whatever. Also, just the encouragement of like believing in the product,

believing in what we're doing. (...) He has been very, sort of, collaborative and inclusive and that kind of thing. (...) So, I think he would just help us based on his own accord, but we wouldn't really see it as him helping us through UN Women per se. (Company 1)

While some of the companies were disappointed that the communication with UN Women turned out to be difficult, it helped that "Peter" took some responsibility. *"The communication has been almost hopeless. I have tried so hard.. eh, Peter was here and he was very excited. And so, we sat with him a few days before he left, and he spent time with us and stuff like that. So, Peter has tried."* (Company 2). "Peter" ended up taking that responsibility even though it was not assigned to him because he realized that UN Women did not have a plan for how they would nurture the relationships with the young startups, or the bandwidth and resources to do it. When returning to Oslo for the follow-up workshop, "Peter" visited the companies at their offices to listen to how far they had come and provided them with mentorship and advice.

The Obrecht and Warner's (2016) report showed that organizations that were effective in collaborating with others, usually had a person in the innovating team with the responsibility of overseeing the relationships and engagement activities in the innovation process.

According to the report, effective management of collaborations depends largely on the individual who holds the key relationship management role, and the passion and skills of the relationship managers were consistently found to be the key to the success in the innovation process (Obrecht & Warner 2016: 41). These managers were often "translators" across the sectors relevant to the innovation and can be seen in relation to what Ring & Van de Ven (1994) refer to as "cupids".

Gray & Hettiarachchi (2014) also emphasize that partnership brokers need to not only navigate the complexities of humanitarian organizations and technologists, but to also have an understanding of the sub-cultures within each industry. The broker also needs to understand the end users of the system. "Peter" comes from a technology background, and has good overview over the blockchain space and the different companies and actors there. He had some previous interaction with NGOs, but he pointed out that that has never been his main focus. *"In essence, the partnership broker needs to be a multi-span bridge. A person who can connect and bring together not just the partners, but the different layers and needs of stakeholders within each individual partner"* (Gray & Hettiarachchi 2014). This bridging function is needed primarily in the early stage of the partnership, according to Gray & Hettiarachchi (2014).

The research findings showed that “Peter” took on the responsibility of keeping in touch with the companies, and that he had some translation capacity between the technology companies and UN Women in the sense that he was hired to help UN Women understand the technology and the companies. However, there was no involvement of the end users at this point in the process and, as mentioned above, this was not “Peter’s” field of expertise. UN Women representatives expressed that it was too early to involve end users, and that they would come into the picture during the pilot testing in the field. However, “Peter” did explain that the team in the humanitarian unit would help him understand more about the situation in the field, and what sort of contexts the blockchain solution will have to work in.

The two “cupids” played active roles at the hackathon and the blockchain lab. A factor that supported collaboration was the events organized by UN Women. These created places for different people with different skill sets and capabilities to meet, exchange ideas and work towards a shared goal. If UN Women had chosen to organize the blockchain project in a different way, and brought in the private sector at a later stage, it may have had a different outcome when it comes to collaboration. This takes us back to Kanter’s (2000) four characteristics of innovation processes. Kanter claims that innovation processes are boundary crossing, and that there is evidence that many of the best ideas are interdisciplinary in origin. This also connects to the definition of innovation as “new combination of existing resources” (Schumpeter 1942). The research findings confirm that the combination of different people created new ideas and new collaborative relationships.

7.2 Support from top management and the willingness to take risks

As previously stated, the data showed that UN Women representatives experienced great support from the top management in UN Women, and especially from the Deputy Executive Director. In fact, the data showed that the blockchain idea started at the top level. *“Our Deputy Executive Director has put this high on the agenda, and that creates a space to really create something new.”* (UN Women 4). The commitment and support from top management is in the innovation literature often associated with successful innovation (Tidd & Bessant 2013; Daellenbach, McCarthy & Schoenecker 1999; Elenkov & Manev 2005).

In the interview with the Deputy, he expressed that he wants UN Women to be an innovative organization and that he wants UN Women to explore the possibilities that lies in new technologies that can help empower girls and women globally. He also believed that it is vital

to have support from top management to bring ideas and innovations ahead in the organization. Furthermore, he emphasized that it is extremely important with leaders who are not afraid to take risks, and who communicates this effectively to the rest of the organization.

According to the innovation literature, innovation is inherently uncertain, and will therefore always involve failures and successes. Tidd & Bessant (2013: 110) therefore notes that successful innovation management involves preparing the organization to take risks and accept failures. It was also noted from the report from UNICEF (2015) that a modest amount of risk must be taken in order to try out new projects that can potentially reach a great impact for beneficiaries. In the interviews with the innovation unit representatives, they also emphasized that they need to change the narrative around failure, and that they therefore would see a “failed” pilot as valuable learning, and not as failure.

I think that really a part of our work in innovation is also changing the narrative around failure. And especially with a technology that is so new, we would have certainly learned a tremendous lot, we certainly would have moved the ecosystem forward, we would have moved I think everything forward. And if then the pilot fails, it fails. I think if every innovation works it's not very innovative. (UN Women 1)

If UN Women can conduct a good or a bad.. or, not bad, but failed pilot on the ground, that is also a value to the other practitioners. (UN Women 2)

However, Tidd & Bessant (2013: 110) note that this is not to say that unnecessary risk should be taken. As explained earlier in the analysis, UN Women reduced the risks through several mechanisms. The use of information collection and capacity building was one of these (Tidd & Bessant 2013: 110).

A representative in Innovation Norway also believed that the Deputy Executive Director is the driver of the bigger change process going on in UN Women, and that he sees the blockchain project as a symbolic project for how the organization will work in the future. The support from top management and the increased focus on innovation and technology, in addition to the innovation funding provided by the government of Denmark, lead to the establishment of the innovation unit. The unit has dedicated resources who work with innovation, which served as important supporters in the blockchain project. UN Women also

experienced great support from other colleagues in the organization which was important for the project moving forward:

It has been great enthusiasm about the blockchain project in all of UN Women. So, everybody from facilities and procurement and everybody has been very excited. So, it has not been any difficulties in getting people to work on this internally. And in matter of fact, I heard from one of the managers during the lab that they have never seen so much good collaboration across all the offices in UN Women. And it is because people think it is exciting, and that we have managed to engage and include them. So, it is a combination that this is an exciting initiative, and that we have managed to make everybody feel ownership. No matter what office they come from. (UN Women 4)

7.3 Innovation funding

Another factor that supported collaboration in the blockchain project was the newly established innovation agreement with Innovation Norway, and the funding provided through the NOREPS grants emphasizing private sector collaboration:

The money we have applied for from Innovation Norway is to be able to work together with the UN and the private companies who offer this technology, and with the end user in order to end up with a good product (...) And we seldom get the opportunity to work like that. So, the way that Innovation Norway wants this to happen is very.. innovative! In how this will work. So, they are facilitating and making sure that we can have an optimal way of making this work (UN Women 4).

With the new mandate from the Ministry of Foreign Affairs focusing on humanitarian innovation, the NOREPS department in Innovation Norway needed a bold, radical innovation project to pilot their work on the new mandate. In this way, the risks and uncertainties connected to the project was also an enabling factor: *“So, there was a space there because it was so innovative for us and for UN Women. So, it created a space for us to work together.”* (Innovation Norway representative). Several representatives from UN Women also emphasized that the grant provided from Innovation Norway was a triggering factor for the start of the blockchain project. Moreover, the flexible innovation funding they got from the government of Denmark was also very valuable for innovation projects in general:

The Denmark funding has been great in the sense that it is flexible. A challenge with standard development funding is it is less flexible because a logframe is defined upfront. It also makes failure more difficult. The great part about innovation funding is that it is flexible, so it does give us more room

to adapt to changing needs and also opportunities, and room to learn from failures (...) It's also valuable because sometimes these things do take time to learn, and sometimes you do need to go through a process in able to come up with a different solution.... (UN Women 1)

The quote above emphasizing the difficulties with standard development funding is also in line with the findings of Nielsen & Rodrigues Santos (2013: 57-58) that humanitarian organizations are often limited with short-term budget frames given by its donors. The head of the innovation unit further underlined that they do not have a lot of the flexible type of funding that encourages and innovative approach, and that this is a barrier.

7.4 Technology optimism and resource dependency

As mentioned in the introduction of this thesis, there exists a great optimism about technology and its ability to solve difficult, global challenges both in the humanitarian organizations and the private sector. An important factor that supported the collaboration between the companies and UN Women was the shared belief that technology can help solve some of the challenges faced by women and girls in humanitarian settings. There has also been a great momentum and media attention around blockchain technology over the past couple of years. This momentum created a space where UN agencies and blockchain companies have started talking together. It has also created a space where UN agencies, who are normally very competitive, have started to share information and ideas through the UN Blockchain group and other arenas.

A UN Women representative pointed out that the distributed and transparent nature of blockchain technology makes collaboration important: *“We hope we are exploring in a collaborative manner. Because blockchain is a distributed ledger, it is never centralized. We will reach a greater potential if we work together.”* (UN Women 2). The complexity and risks connected to blockchain technology also created a resource dependency where UN Women had to reach to the private sector to be able to develop a blockchain solution. The private sector also needed UN Women's global network and contacts in order to create a solution for the targeted group, which is women and girls in humanitarian settings.

This section has presented factors that supported collaboration in the blockchain project. The next section will present factors that constrained the collaboration.

7.5 Culture eats strategy for breakfast?

The management guru Peter Drucker used the quote “culture eats strategy for breakfast” to send the message about the power of culture in organizations, but also across industries (Gray & Hettiarachchi 2014). Cultural differences was a topic that came up in the interviews with UN Women representatives and the companies. The informants noted that there were various cultural differences between UN Women as part of the UN system on one side, and young technology companies on the other side. The differences in culture was not a barrier for collaboration per se, but it made the collaboration more difficult to manage.

Organizational culture can be defined as “*The values and behaviors that contribute to the unique social and psychological environment of an organization*” (Business Dictionary 2018 URL). This includes the expectations, values, experiences and philosophy of an organization which is in turn expressed in its self-image, its way of working and how it interacts with the outside world. The organizational culture reveals itself in the ways that an organization conducts business, how they treat their customers and employees, how power and information flow through hierarchy and how committed the employees are to collective goals and objectives (Business Dictionary 2018 URL). In the blockchain project, it became clear that the UN Women and the blockchain companies are different in various ways, which in turn affected the evolving relationship between them. The cultural differences manifested themselves in various ways throughout the first year of the innovation process.

First, a UN Women representative noted that the private sector in general has different focus because the UN is not for profit, and the companies need to make a business profit. She further emphasized that this difference can sometimes be a barrier for collaboration, but that they should be able to overcome it:

The second thing is different focus. But I think this one should be solved, because I think public sector tends to focus on the non-profit side more. But the business side, they are running business. So, they want to get some business profit out of it. So, if we can find a sustainable way to develop UN projects which can bring benefits to the people on the ground, but also bring a good future or market generation for the private sector who is involved in it, I think that is a win-win result for both sides. And the people on the ground will even benefit more from this sustainable business model. (UN Women 2)

The difference in focus explained in the quote above was however not found in the interviews with the companies. They experienced that their goals was in line with the goals and the mission of UN Women.

Second, the difference in size, pace and flexibility of the organizations was a subject that came up in the interviews with UN Women, the companies and with Innovation Norway as a manifestation of cultural differences. The companies expressed that there was slow progress in the blockchain project from UN Women's side:

And months pass by, and we do a lot of work, and we are pushing to get out in the field and go high speed. And the reason is to see what works and what does not work. And we can do that much easier than they can. We are much smaller, and more flexible. We are a group of small fish, and they are a big whale. (Company 2)

The difference in size, pace and flexibility was also seen as a barrier to collaboration in Kelley, Schaan & Joncas' (2002) research. In their study, one informant compared the culture of a large organization to the civil service with multiple layers of authority and defined processes where people are rewarded for doing things correctly according to standard procedures, and "staying within the box". She saw this as an opposite to the way that small, entrepreneurial companies work where they are awarded for thinking outside the box, and where high speed is essential. The clash between the entrepreneurial and bureaucratic culture is a common problem in alliances between small and large technology companies (Kelley et al. 2002) which can possibly also be translated to alliances between UN entities and small, technology companies. After all, the UN may be one of the biggest bureaucracies in the world. Other research also indicate that substantial differences in size can be a significant barrier to success in collaboration activities (Jacobini & McCreary 1994; Harrigan 1994; DeMeyer, 1999).

Third, the companies in the blockchain project expressed that it was difficult to keep the communication going, and that they wanted to go to the field as soon as possible. This was also emphasized by Company 3, which was the most mature startup out of the companies followed in this research. It is important to have in mind that the companies followed in this thesis were new startups with young ideas. There is a difference in working with large,

established corporations and small blockchain startups, as emphasized by an informant from Company 1:

I think it's hard working with start-ups as well because they are not the same as an established company. So, it is tricky. And I think that is why, maybe having someone who's a representative who can follow people along the way and touch base might be helpful for them. (Company 1)

Startups work under time and resource constraints to a much bigger extent than large companies. They need to get funding from private and public investors to survive, and they need to be fast paced in order to bring results back to their investors.

The problem is startups. I think it is very difficult. Without getting money.. they have to survive. But middle or big size startups, they are not worried about money, and they want to have better development with better information. So, they are very much interested in the joint development. (UNOPS representative)

UN Women on the other hand, does not have to make a profit to survive. They are able to operate on money from donor countries. However, they do have tight budgets, and pressure to deliver results to their donors. They are also experiencing competition. Companies compete with other companies in the market, and UN agencies compete with other UN agencies for funding and visibility. There is also a big bureaucracy that follows when operating in the UN system. UN Women is, as all other UN agencies, bound by the bureaucracy, operational procedures and procurement guidelines which affect the speed at which they operate and how they are allowed to collaborate with private companies:

I think industry tends to be more flexible, especially with startups, in executing one idea or one project. But in the UN, we have a lot of legacy in operational procedures. A lot of operational barriers, like how to engage with the private sector, how to innovate in the procurement system, all this, and how to streamline a legal process when engaging the private sector. All of this needs a lot of effort. (UN Women 2)

Because of these differences in how companies and UN Women operate, the Innovation Norway representative suggested that the companies also need to adapt to work in the humanitarian sector:

The private sector often lacks humility and understanding that there are a different set of mechanisms in the humanitarian sector. It is not a market economy. It is its own little bubble that works in an entirely different way. So, there is a long way to go. (Innovation Norway representative)

In the interview with the Innovation Norway representative, she also expressed that Innovation Norway is disappointed of the lack of progression in the project. But then, she also pointed out that people need to respect the pace in the UN, and that it is the shared enthusiasm that is the foundation of the blockchain project.

We have to respect that. And I am a very impatient person, so it is a huge challenge for me to work with the bureaucracy in the UN. (...) So, I have become more patient and respectful of the pace in the UN. Because the enthusiasm is still there. And that is what we have in common, and that is what has started this whole project. But we have a different pace. (Innovation Norway representative)

Another manifestation of cultural differences between UN Women and the companies is *language*.

One thing is the language. The common language thing. It's kind of because one side is the public side – the other is private side. The focus is different. So, that influence how we think, how we speak, how we communicate. It would be good if we could share some common language so the communication will be better and we can understand each other better. (UN Women 2).

This view was also confirmed by the companies when they did not understand the EoI document they received from UN Women, and that they found the communication with them to be difficult in general. This shows that there might be a need to develop new ways to communicate with smaller companies.

7.6 Learning gap between humanitarians and technologists

Findings further showed that there is a gap in learning and understanding between the UN and technologists, which some informants experienced as a barrier to collaboration. This was also pointed out by a representative from UNOPS who has extensive experience in talking to technologists and private companies.

Eh, for the past four years I have spent roughly 80 percent of my work time with the private sector. The rest 20% is with UN bullshit. Hahaha. (...) So, tech community and aid community are two things. It's

wonderful that it is so hot these days is to talk about blockchain for humanitarian whatever.. And yeah, the intention is good. Both sides try to meet. So, UN Women is one of those things. I talk to so many people, and the one huge gap is that the tech community has no clue about the aid community and the reality of aid. And the aid community does not have any understanding of blockchain, for example. And a huge gap exists. (UNOPS representative)

The UNOPS representative further explained that the UN and private companies have different types of knowledge, and that it is a problem that technologists only speak to the people at the UN headquarters, and not the UN field staff:

Out of the UN people walking here at the headquarters, maybe 80% of them don't know what the UN is doing in the field. They don't know how to set up a refugee camp, how to address terrorists, how to address abandoned children in a remote area. So, all of that is the reality of what we are working with in the field. People don't have an idea here in the UN system in general. And the tech community talk to who? Those people! Expecting they can get something of reality. So, it's a huge mismatch! You guys need to talk to those people, but you talk to the HQ people who have NO clue! So, this gap is never, never filled! (UNOPS representative)

The UNOPS representative further suggested that the technologists should talk to the UN field staff, and they *“should get out of New York or Silicon Valley. They should spend at least 6 months in the reality, and they will know.”* The learning gap became particularly apparent during the deep dive sessions between the UN evaluation group and the companies after the blockchain lab. The UNOPS representative was on the evaluation team, and he explained that the learning gap was frustrating:

We asked a couple of questions in the deep dive.. let's say we have one million dollars and finance a potential refugee or beneficiary.. what do you do? If it is a question to the aid worker in the field, they can immediately give all the risks and constraints and what they have to do. But none of the tech companies can give proper response. It's just out of the imagination. Beyond imagination. “Eh yeah, it's easy. We have an app and we register”. (UNOPS representative)

It was also pointed out that there is a big challenge that the internal knowledge about blockchain technology in the UN is still very insufficient. *“Very superficial knowledge just flowing, not only in UN Women, but everywhere. So, general misunderstanding and lack of understanding really prevails in the UN system”* (UNOPS representative). He further explained that it is difficult for UN staff to understand blockchain technology, because the essence of blockchain technology is that it does not require centralization of power or money:

“In other words, that’s the direct opposite principle of the nation state. And what does the UN consist of? Nation states.” (UNOPS representative). This was also a subject that came up when talking to the companies:

When you’re doing digital innovation, you have to connect the people who know the problem area to the people who know the technology. And this is often uneven. Because the people who know the problem do not understand the technology. (...) And people who are not strong with the technology does not always manage to connect the two communities. (Company 4)

7.8 Are the individuals defeated by organizational requirements?

UN Women is a part of the UN system, which have specific rules, guidelines and procedures for how they operate. Research findings showed that some of these organizational requirements may hamper innovation and collaboration with the private sector in general, but also specifically in the blockchain project. A topic that came up in the interview with the UNOPS representative is the requirement for visibility in the UN. According to him, UN Women and every other UN agency need to keep up their visibility and media attention in order to meet political requirements, and that this requires so much time and effort that it sometimes hampers innovation and progress.

I think that UN Women is in dilemma always. Substantially, they want to be successful. But also, politically they need to be successful. To keep on drawing the media attention, keep on managing publicity. All of this. That’s.. and all UN agencies have that kind of requirement. But very often, that kind of requirement is not exactly in line with substantial requirements. (UNOPS representative)

Furthermore, he explained that many UN representatives tend to just go for the visibility so they can show what they have achieved to the top management in the UN agency, and to their donor countries. He explained that every individual in the UN bureaucracy has to do these kinds of things, but that innovative approaches are not always so visible. *“A truly innovative approach is the most invisible thing. So, if it’s invisible, even if it is truly innovative, nobody cares. Because everyone cares about the political attention. That’s a huge challenge.”* (UNOPS representative). He further emphasized that this is because of the system, and not the individuals. He suggested that individuals working with innovation in the UN are often defeated by organizational requirements.

So, many people I know that are working together: UNICEF, WFP, UNDP – they are genuinely, genuinely trying to improve current systems through the blockchain. There are lots of chances coming on in the next two decades maybe. But it's difficult to imagine they are going to win, because of the system. (UNOPS representative)

As mentioned earlier, UN Women representatives emphasized that the publicity and media attention around the blockchain project has been important. They have felt great support from many people as a result of that, which also inspired them to continue on their work. The media attention was also positive for the companies in the blockchain project as they got positive publicity of being associated with UN Women and a good cause, and also got to spread the word about their solutions to a broader audience. On the other side, some of the companies felt uncertain about how committed UN Women really was to the project, or if they just did the events to get good publicity. The UNOPS representative pointed out that such attention might also put more pressure on innovation efforts to be successful, and not allow for an iterative process and possible failures:

If it's innovation, it's fine making mistakes. Something wrong always has happened. It should be able to absorb this back and forth, back and forth. That is the process of innovation. But all this media hype, the requirement of publicity in the UN crush this sound, healthy process. That's scary. (UNOPS representative)

Another structural factor noted by one of the innovation unit officers that hampered collaboration is that the UN has very strict rules and due diligence for how to engage with the private sector. Her impression was that although there is increased focus on collaboration with the private sector in UN Women and in the UN system as a whole, there are still rules and regulations that serves as barriers for collaboration. She noted that there is much more wealth and potential in the private sector than in the donor countries, and that the private sector is eager to contribute. The UNICEF innovation unit has come up many times during the data collection in this regard. Their innovation unit was established in 2007, and is now seen as a leader in the innovation activity in the UN system (Amatollo 2015; Bloom & Faulker 2015). UN Women representatives explained that they are talking to UNICEF about how they have conquered different types of barriers.

We are talking to them about how they conquer these barriers, not only about funding because they also receive funding from external partners to invest in this innovation fund, but also how to give the

funding from UNICEF to private sector. This is something we want to learn. So, the funding flow, both in and out with relation to the private sector is something that is currently explored by the UN but it's not mature yet. (UN Women 2)

Many UN agencies look up to UNICEF and how they are doing innovation and how they have been able to work with the existing UN regulations for private sector engagement, and still have been able to create a venture fund (UNICEFinnovationfund 2018 URL) to support startups:

I think on the operations side, our rules and processes and things like that are still very traditional. And so, for example we are working more closely with our operations team, and cross-agencies. So, for example UNICEF has made a lot of progress in terms of the way they do procurement. So, of course they're using UN rules, but they have been able to do a lot more thinking around that, and how they can still within those rules have for example a venture fund, which they have. (UN Women 1)

UN Women representatives explained that they are trying to learn from UNICEF and how they have been able to innovate in the way they do procurement, and how they have established the venture fund. They explained that when a UN agency has done that, other agencies can piggyback on that work. UN Women is therefore planning to meet with the UNICEF operations team to learn how they have done it, and also to see if they can use the legal agreements that are already developed by UNICEF:

So, we're trying to do more, I think in 2018 that will be a big focus for us to also try and make sure that we don't leave the operations side. (UN Women 1)

This chapter have presented various factors that supported and constrained the collaboration process between UN Women and the companies in the blockchain project. The following section will summarize and discuss the research findings in relation to previous research.

8 Discussion and conclusions

This chapter will summarize and discuss the research findings in relation to the general innovation literature, and literature on collaboration in humanitarian innovation. Since this thesis investigates two research questions, the discussion is divided into two parts. Section 8.1 will summarize findings and discuss RQ1, and section 8.2 will summarize findings and discuss RQ2. Limitations and implications for further research will be discussed in section 8.3. Section 8.4 will be based on the research findings in this case study and prior research to discuss implications for cross-sector collaborations between humanitarian organizations and private companies in innovation processes. Finally, there will be a short conclusion.

8.1 The evolving relationship between UN Women and the companies

The first research question (RQ1) addressed in this thesis is the following: How does the collaboration between a humanitarian organization and private companies emerge and unfold in the early phase of radical, high tech innovation processes?

As presented in the previous chapter, the analysis showed that the relationship between UN Women and the companies evolved through two co-evolving pathways. The first pathway was UN Women's process of building a blockchain capacity internally. This pathway consisted of exploiting relevant knowledge that existed across UN Women's country offices, units and programs, and hiring an external blockchain expert to help them understand blockchain technology and find a suitable partner. The pathway also involved reaching out to other UN agencies and the private sector to learn about their blockchain initiatives and their experiences and learnings. The hackathon, the workshop and the blockchain lab were part of this process, and the assessment report was produced as a means of capturing the knowledge, and to decide the strategy for how to move forward with the project. Findings suggest that the gathering of internal and external knowledge was also a means of reducing risk in the project, and that the capacity building was important throughout the entire first phase. This is also in line with Kline & Rosenberg's (1986) Chain Linked Model. Tidd & Bessant (2013: 331) also emphasize that investing in acquiring early knowledge is a challenge when managing innovation processes, and that this is done to get early information that can guide decision making in the evolving process.

The second pathway was UN Women's search for a company to partner with for the pilot testing. To analyze this, analytical terms from Ring & Van de Ven's (1994) process model was utilized. The analysis showed that some parts of the model matched what was found in the empirical data, and some did not. The model suggests that cooperative IORs can emerge due to resource dependence. The findings in this case study confirmed this assumption. UN Women needed the expertise and technical capabilities of the blockchain companies to develop a blockchain solution, and the companies needed UN Women's humanitarian expertise, legitimacy and network in order to develop a solution suitable for humanitarian settings. This was an interesting trade-off where UN Women and the companies exchanged different types of value in the collaboration. This finding is also in line with the studies conducted by the MIRP researchers where they observed that ideas were developed to achieve outcomes by people who did *transactions* with each other in changing organizational contexts (Van de Ven et al. 2008: 6).

The process model further suggests that inter-organizational collaboration processes are cyclical processes of negotiations, commitments and executions stages. The empirical findings identified that the relationship evolved through these three stages, which related respectively to the hackathon, the follow-up workshop and the blockchain lab. One of the main findings was that the time that passed between the commitment and execution stages was of critical significance for the development of the IOR. This period was characterized by lack of communication, lack of a follow-up process, and the lack of clarification of expectations from UN Women.

The process itself got delayed, and this challenged the level of trust between the companies and UN Women, although the evidence showed that "Peter's" engagement with the companies helped the situation. The lack of engagement of UN Women in this period of time was most likely because UN Women had already decided to not take the hackathon ideas further, and therefore was not able to spend time and resources on relationships that would not turn into a real partnership. This was however never communicated to the hackathon companies, which led to uncertainty, confusion and distrust. Company 1 and 2 were frustrated because they wanted to keep in contact with UN Women since they had been invited to live test their solutions at the blockchain lab in New York. This finding signaled that the parties should execute what they have agreed upon in a timely manner within a reasonable amount of time in order to establish trust in the IOR. This is not an issue covered by Ring & Van de

Ven's (1994) theory, and is therefore an interesting finding in the empirical data that can be added to the process model theory.

At the execution stage, the informal commitments made at the follow-up workshop were not taken into action for all the companies. Company 1 and 2 were invited to the lab only as observers since UN Women had decided to go for more mature solutions because this was more efficient for them. Company 3 was accepted to participate in the lab, and they were very content with the communication and collaboration they had with UN Women.

Furthermore, the analysis found that similar to Ring & Van de Ven's (1994) model, the three stages were assessed based on efficiency and equity. These assessments shaped the evolving process. The relationships with the young startups ended based on the assessment that it was not efficient to continue the collaboration for neither of the parties, and as the process evolved, the companies did not feel that there was "fair rates of exchange" in the collaboration either. The findings also suggest that assessments were based on various risks connected to the blockchain project. UN Women's process of building a blockchain capacity internally was a mechanism to tackle these risks, although it also delayed the process. This delay affected the level of trust between UN Women and the companies. Assessments were also based on UN procurement regulations, which to a large extent govern the way UN Women can engage with private companies.

The research findings showed that the two pathways were interconnected, and that they developed throughout the first year of the blockchain project. Similar to Kline & Rosenberg's (1986) perspective, the analysis showed that the two pathways was different layers of the innovation process, and that the social and contextual factors in the process were important in the development of the blockchain solution, as well as the acquirement of new knowledge.

It is important to emphasize that the IOR model was developed to investigate inter-organizational relationships between *business firms*, and not relationships between organizations from different sectors with significant differences in size and flexibility as investigated in this thesis. The analysis showed that there were several similarities between the model and what was found in the empirical data. However, the fact that the inter-organizational relationships investigated here spanned across three different sectors required knowledge and insights from the humanitarian innovation literature and on cross-sector

collaboration. In order to understand *why* the IOR evolved as it did, factors that supported and constrained collaboration in this specific context were identified.

8. 2 Factors supporting and constraining collaboration

The second research question (RQ2) investigated in this thesis is: What supports and constrains collaboration between a humanitarian organization and private companies in the early phase of radical, high tech innovation processes?

The literature on collaboration and humanitarian innovation states that cross-sector collaborations are often difficult to manage, and many are unsuccessful (Galaskiewicz & Colman 2006). The findings from this case study showed that there were system level factors and social factors that supported as well as constrained collaboration.

First, findings showed that “Peter’s” and Innovation Norway’s roles as facilitators of the IOR served as a supporting factor in the collaboration. Second, the support from senior management and the willingness to take risks was a factor that supported the collaboration and the progress of the blockchain project. A third supporting factor was the flexible innovation funding provided by the government of Denmark for the UN Women Innovation Unit, and the funding provided from Innovation Norway through the NOREPS grants for humanitarian innovation. Finally, the general technology optimism and hype around blockchain technology created a common space where UN agencies and tech companies have started to talk and collaborate. The complexity of blockchain technology also created a mutual resource dependence, which also facilitated collaboration between UN Women and the companies.

Although there were several factors that facilitated collaboration in the project, some factors constrained collaboration. The findings showed that cultural differences was a factor that made the collaboration difficult to manage. Differences in language, focus, size of the organizations, pace and flexibility were mentioned as main differences between UN Women and the blockchain companies. A second factor that constrained collaboration was the learning gap that exists between the UN and technology companies. Companies do not know the reality of aid, and the UN does not have technological expertise. Findings showed that this learning gap is not filled because there is a lack of communication between technologists and

humanitarian field workers who have hands on experience from working in humanitarian contexts. Finally, it was noted that certain organizational requirements in the UN hampers innovation and collaboration. A central topic that came up in this regard is the visibility requirement, but also other requirements that govern the way UN agencies can interact with the private sector like operational procedures and due diligence procedures.

Collaboration between organizations and companies from different sectors have been emphasized by the literature on humanitarian innovation and has also been put high on the policy agenda through the World Humanitarian Summit and the Grand Bargain agreement (OECD 2016). Findings from interviews also showed that there have been strong signals from the top management in the UN that they want the agencies to work in a more collaborative way with each other, and with the private sector.

However, the literature argues that tri-sector collaboration between the humanitarian, public and private sector is most suitable to address global challenges because these can overcome individual limitations like market failure when working together (Kolk 2014:15). This was also emphasized in the report from UNICEF (2015) stating that the private sector and governments will be the most important partners to support innovations in the humanitarian sector in the future. The findings from this case study also confirmed that the Government of Norway (represented by Innovation Norway) was important for the innovation process, as the funding was a catalytic factor for the start of the blockchain project. Innovation Norway's role as a third party brokering the collaboration process was also a supporting factor.

The 15 case studies conducted by Obrecht & Warner (2016) identified some practices of organizations and innovating teams that were effective in collaborating with others. The data found that some of these practices was also present in the UN Women Blockchain project, and some were not. First, Obrecht & Warner (2016) identified that the senior leaders were supportive of collaboration. This was also found in the blockchain project. The top management in UN Women expressed support and excitement about the blockchain project, which served as a supporting factor for the collaboration.

Second, the report found that strong relationships were established within and outside the humanitarian system. In the UN Women Blockchain Project, there were no strong relationships with actors outside the humanitarian system, but rather several weak ties to

various companies. UN procurement regulations makes it difficult to establish strong relationships with companies at an early stage of a procurement process because the guidelines emphasize that there has to be open, international competition in all solicitations. UN Women's plan was therefore to establish a strong relationship with the selected partner for the pilot testing, after going through a procurement process. There were however strong relationships with other UN agencies who are active in the blockchain space, in order to exploit the knowledge and resources within the UN system.

The report also found that organizations that were effective in collaborating with others had one person who had the responsibility of overseeing the relationships and engagement activities in the innovation process (Obrecht & Warner 2016). This person was given time and resources for outreach, and they made sure the same person dealt with the relationships management throughout the entire project. There was also a strong "translation" capacity for communication across technical staff, humanitarians and end users. As presented in the analysis, "Peter" took on some of these responsibilities. However, he was not assigned these tasks, and was not provided with the time and resources to do that in a meaningful way. The report further found that extra staff was recruited outside the humanitarian sector with technical competence. This was also found in the blockchain project, as "Peter" was hired as a blockchain expert to help UN Women in their innovation process.

The private sector is often seen as the most obvious partner for humanitarian actors who engage in innovation practices. There is widespread acknowledgement in the literature on humanitarian innovation that partnerships and collaboration need to improve (Deloitte 2015a; Deloitte 2015b; Ramalingam et al. 2015; Obrecht & Warner 2016). The challenges in collaboration are often seen as system-level problems that need to be addressed with larger initiatives (Obrecht & Warner 2016).

The barriers to innovation identified in the analysis showed that there are system-level problems that served as barriers to collaboration, such as organizational and operational requirements in the UN that are still very traditional, as well as the strict due diligence they must follow when interacting with the private sector. However, the findings from this case study also suggest that there are a series of issues that can be dealt with on an interpersonal level like cultural differences and communication difficulties. This is also in line with the findings of Kelley et al.'s (2002) study based on a survey of interviews with executives from

the Canadian high tech industry. They found that the biggest challenges in the initial phases of an alliance relate to relationship issues between the partners. They found that managers often emphasized technical and legal issues over people issues when choosing a partner, and that this in turn lead to issues like communication problems, cultural differences and responsibility problems among others (Kelley et al. 2002).

It is also found in the literature that there is a tendency that humanitarian organizations underinvest in partnerships with others, signaling that there is a need for a shift in the mindset of humanitarian organizations in how they approach, establish and invest in partnerships with the private sector (Obrecht & Warner 2016). This is also a tendency found in the UN Women Blockchain Project. As Bessant & Möslein (2011) suggest, open and collective innovation (OCI) may become an increasingly relevant way for humanitarian organizations to create more space for the private sector to engage in humanitarian innovation. Open and collective innovation involves multiple actors, and is based on the principle that many minds can generate many new ideas (Bessant & Möslein 2011: 5). Even though UN Women need to invest more in the development of new partnerships, the blockchain project was a step in this direction. They looked outside of their own organization to harness the ideas and skills from technology companies allowing for a wide range of inputs from different stakeholders.

Bessant & Möslein (2011) suggest that radical innovation may be constrained by the way that organizations frame their world, and that mobilizing and designing for many different inputs and viewpoints, like in the blockchain project, may therefore be a way of breaking out of that frame. In the blockchain project, this was done through the three key events where many different people were invited to join and share their ideas and viewpoints. This was also done by hiring “Peter” as an external blockchain consultant who brought fresh thinking into the project.

This section have discussed the research findings on supporters and limitations of collaboration in light of literature on humanitarian innovation and cross-sector collaboration. The following section will discuss limitations and implications for further research.

8.3 Limitations of this case study and suggestions for further research

The UN Women Blockchain Project have been the main study object of this thesis. The innovation project was followed over the course of one year, and it involved a limited number of informants, which makes this a small study. However, some of the findings of this case study have also been found in previous research. This gives the case study more credibility and reliability. Nevertheless, scientific knowledge is developed and established over time. Thus, there is a need for more research to be able to draw more specific conclusions to the research questions.

As the momentum and activities around cross-sector collaboration and humanitarian innovation are increasing, innovation scholars should conduct more research on these topics as this also has a great societal relevance. There is a general lack of research on innovation within the humanitarian context, and thus the knowledge about the best innovation practices in humanitarian organizations remains limited. The humanitarian sector needs more research to understand how to collaborate with the private sector in a strategic and effective way for innovation.

More specifically, there is a need to develop more knowledge on early stage innovation processes in the humanitarian sector: how partnerships can be established and supported, and how donors can target their support in a better way to ensure stronger strategic partnerships. Further, there is a need for more longitudinal case studies on successful collaborative innovation processes in the humanitarian sector – from idea generation, to implementation and diffusion. This in order to address bottlenecks, and to gain more knowledge on how to ensure a win-win situation for the beneficiaries, the humanitarian organizations and the private sector throughout the entire innovation process. Furthermore, research should investigate how the UN procurement regulations affect innovation and private-sector collaboration in the humanitarian system in order to address bottlenecks and path dependencies at a system level.

Given the findings of this case study, and the prior research done on the topics investigated, the following section will discuss some implications for collaboration between the humanitarian and the private sector in innovation.

8.4 Implications for collaboration between the humanitarian and the private sector

There is a high level of ambiguity and uncertainty that seems to pervade in the initial phase of a collaborative innovation process with actors from different sectors. It may therefore be beneficial to view the early stages of the collaboration as a period of trust building and mutual discovery by the partners and those involved (Kelley et al. 2002). Findings from this case study suggest the parties should get to know each other's intentions and motives in order to build this trust in the initial phase.

Through the case study of the blockchain project, informants communicated that they would have wanted more openness, honesty and clear communication from UN Women from the beginning. Clarification of responsibilities and expectations at an early stage is important, although this can also be difficult in innovation processes involving a great deal of uncertainties and risks – which most innovation processes do. It is also important to have in mind that innovation projects in the humanitarian sector are often under time and resource constraints, which can make it difficult to take a lot of time to build trust and get to know the partner. With that being said, it might be worth the investment in order to build successful, long-term partnerships.

Ring & Van de Ven's (1994) model identifies three cyclical stages in the IOR process: negotiations, commitments and executions. This thesis found that the time between commitments and executions stages was of great importance for the development of trust between the organizations. It may therefore be beneficial that the parties in the IOR execute what they have agreed upon in a timely manner within a reasonable amount of time in order to establish trust in the early phase of the IOR. They should also communicate on a regular basis during this period.

The literature on humanitarian innovation suggest that one person should be given the responsibility of nurturing the relationships between the parties in the collaboration project (Obrecht & Warner 2016), which was also found in this case study. This person should be provided with enough time and resources to do this thoroughly, and s/he should have great interpersonal skills, in addition to a "translation" capacity across the humanitarian and private sector. This requires that the person has previous experience from both sectors and know their

game mechanics and how they are incentivized. Having a resource with these responsibilities may help reconcile the cultural differences, close the learning gap between the technologists and humanitarians, and compensate for organizational differences between partners. This however, may be a question of funding and prioritizing where and when to spend the money.

It may therefore serve as fruitful advice to Innovation Norway and other donors who provide funding to humanitarian innovation processes that the funding provided to early stage innovation projects should also cover a resource who can manage the relationships between humanitarian organizations and private companies. Research shows that in terms of amount of funding, the majority of innovation funds in the humanitarian sector allocate less money for the initial invention phase of innovation processes compared to later stages (Ramalingam et al. 2015: 23). One example is the Humanitarian Innovation Fund (HIF) which allocates £25,000 for the early stage of innovation processes, while £150,000 is spent on development and implementation stages. Another example is the US Agency for International Development' Innovation ventures offers \$100 000 for the invention stage, \$1 million for development, and \$10 million for scaling of innovations (Ramalingam et al. 2015: 23).

This case study have showed that the initial phase of an innovation process is uncertain, complex and that it demands a lot of resources. There may therefore be a need to allocate more resources in early stage innovation projects involving collaboration with private companies. If humanitarian organizations were provided with the resources to manage the early stage of the innovation process more thoroughly, it may lead to more effective and collaborative innovation processes with better communication and translation between the parties. Furthermore, the data from this case study suggest that governments should provide more of the flexible type of innovation funding which is not tied to a tight time frame, but provides room for organizations to explore and learn over time.

The empirical findings emphasize that humility and respect for the fact that organizations are different is important. UN agencies must gain a better understanding about how the private sector works in general, but also how the new generation of social entrepreneurs and startups work. It was observed in the fieldwork that the companies and entrepreneurs in the blockchain project were not “just out to make a profit”, but had built their business models around solving societal issues while at the same time striving to be sustainable financially. Hence, the mission of UN Women and the mission of the social entrepreneurs followed in this thesis was

not as different as one might think. Austin & Seitanidi (2012a) note that non-profits engagement with businesses has been stimulated by the emergence of new value creation modalities such as social entrepreneurship as opposed to commercial entrepreneurship. Social entrepreneurship has blurred the boundaries between the humanitarian and private sector as their goals and missions are converging. This convergence is fostering collaboration, because the two sectors can find common ground and linked interests (Austin & Seitanidi 2012a: 733).

Private companies and social entrepreneurs on the other side, need to increase their knowledge of the humanitarian system. If they would like to collaborate with the UN, they need to learn how the UN system works in terms of procurement processes, due diligence and other mechanisms in the sector. This may create an increased level of understanding. In addition, a level of respect and understanding that the UN works at a different pace is needed. At the same time, UN agencies should strive to be more efficient in working with private companies and startups, as startups are under time and resource constraints and need to deliver results to their investors.

Further, findings suggest that UN agencies need to improve the ways of engaging with private companies in general. One way of doing this is to learn from how other agencies who have done more thinking on how to collaborate with the private sector. As noted by several informants, UNICEF has come a long way in this regard. However, the procurement regulations and other operational barriers need to be addressed at a system level with larger initiatives.

The blockchain project has been a good example of how a UN agency can engage with companies in a new way, through events and live testing involving different types of actors and inputs. However, the lessons UN Women have learned through the blockchain project should be captured and shared in order to ensure an even better process next time around, and to come up with a strategy for how to manage informal collaborations, and formal innovation partnerships.

8.5 Concluding remarks

In order to address global challenges, the humanitarian sector is working to explore how emerging technologies can be utilized for a more effective and cost efficient humanitarian response. This demands collaboration with the private sector and application of new, sustainable business models that may help close the funding gap the sector is currently experiencing. The sector is moving from aid – to trade. The ability to form and execute collaborative innovation initiatives may therefore be increasingly important.

The case study of the UN Women Blockchain Project have showed that UN Women is exploring new ways to interact with private companies and involve other UN agencies in innovation processes to develop a blockchain solution for women and girls in humanitarian settings. This needs time, funding and a lot of work and adaption from UN Women, and adaption in the UN system as a whole. Relationship issues between the parties in the collaboration, in addition to structural and operational issues in the UN, appear to be the major challenges in the early phase of the cross-sector collaboration in the blockchain project.

The importance of facilitating and fostering relationships between the parties must therefore not be underestimated. Innovation literature show that underestimating “soft factors” in alliances have caused the failures of many ventures (Kelley et al. 2002). Findings in this case study suggest that UN Women and the UN system carry a heavy and well-known name. With this follows expectations of being a serious player. This makes it important to have clear communication when establishing relationships with private companies. By doing this, the UN is better equipped to keep up their strong reputation, and still be an attractive partner for businesses.

If current global challenges and the funding gap in the humanitarian sector demands that humanitarian organizations develop the ability to form and execute collaborative projects with the private sector, executives will be required to be more adept when dealing with operational and structural requirements, but also issues related to cultural differences, interpersonal relationships and communication difficulties. Thus, the research findings strongly suggest that social factors should be accounted for and taken into consideration to ensure successful long-term partnerships.

Literature

- Agenda for Humanity. (2016). *Restoring Humanity. Global Voices Calling for Action*. [Executive Summary from World Humanitarian Summit] URL: https://www.agendaforhumanity.org/sites/default/files/resources/2017/Jul/WHS_Synthesis_Report_Executive_Summary.pdf
- Amatollo, M. V. (2015). Innovation by Design at UNICEF: An Ethnographic Case Study. [PhD], *Case Western Reserve University*. Retrieved from <http://tinyurl.com/amatullo-dissertation>
- Austin, J. E. (2000a). Strategic Collaboration Between Nonprofits and Businesses. *Nonprofit & Voluntary Sector Quarterly*, 29(1), 69-97. <https://doi.org/10.1177/0899764000291S004>
- Austin, J. E. (2000b). *The Collaboration Challenge: How Nonprofits and Businesses Succeed Through Strategic Alliances*. San Francisco, CA: Jossey-Bass.
- Austin, J. E., & Seitanidi, M. M. (2012a). Collaborative Value Creation: A Review of Partnering Between Nonprofits and Businesses. Part 1: Value Creation Spectrum and Collaboration Stages. *Nonprofit and Voluntary Sector Quarterly*. 41(5). 726-758. DOI: 10.1177/0899764012450777
- Austin, J. E., & Seitanidi, M. M. (2012b). Collaborative Value Creation: A Review of Partnering Between Nonprofits and Businesses. Part 2: Partnership Processes and Outcomes. *Nonprofit and Voluntary Sector Quarterly*. 41(6). 929-968. DOI: 10.1177/0899764012454685
- Austin, J. E. (2014). Foreword. In Seitanidi, M. M., & Crane, A (Eds.). *Social Partnerships and Responsible Business – a Research Handbook*. London: Routledge.
- Baden-Fuller, C. & Pitt, M. (1996). *Strategic innovation*. London: Routledge.
- Baxter, J. (2010). Case Studies in Qualitative Research. In Hay, I. (Ed.) *Qualitative Research Methods in Human Geography*. Oxford: Oxford University Press. 81-98.
- Berger, I. E., Cunningham, P. H., & Drumwright, M. E. (2004). Social alliances: company/nonprofit collaboration. *California Management Review*. 47(1). 58-90. URL: <http://journals.sagepub.com/doi/pdf/10.2307/41166287>
- Bessant, J. & Davies, A. (2007). Managing service innovation. In Connolly, C. (Ed.) *DTI Occasional Paper 9: Innovation in services*. London: Department of Trade and Industry. URL: <https://www.google.no/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0>

[ahUKEwjU3MLA3vjaAhXChaYKHWRDAyEQFggoMAA&url=https%3A%2F%2F
europa.eu%2Fcapacity4dev%2Ffile%2F21451%2Fdownload%3Ftoken%3DELQUH
XWZ&usg=AOvVaw2D5aMXr_ JejtGXwnQfEijQ](https://ore.exeter.ac.uk/repository/bitstream/handle/10871/14935/6.pdf?sequence=2&isAllowed=y)

- Bessant, J. & Möslin, K. (2011). Open Collective Innovation. The Power of the Many over the Few. *UK: The Advanced Institute of Management Research*. URL: <https://ore.exeter.ac.uk/repository/bitstream/handle/10871/14935/6.pdf?sequence=2&isAllowed=y>
- Bessant, J., Ramalingam, B., Rush, H., Marshall, N, Ho man, K. and Gray, B. (2014) Innovation management, innovation ecosystems and humanitarian innovation. *London: DFID*. URL: www.alnap.org/resource/22130.aspx
- Bessant, J., Rush, H., & Trifilova, A. (2015). Crisis-driven innovation: the case of humanitarian innovation. *International Journal of Innovation Management*, 19(6), 1-13. URL: <https://doi.org/10.1142/S1363919615400149>
- Betts, A., & Bloom, L. (2014). Humanitarian Innovation: the state of the art. *OCHA POLICY AND STUDIES SERIES* (009), 1-30. URL: [https://s3.amazonaws.com/academia.edu.documents/37157269/OP9_Understanding_Innovation_web.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1525876630&Signature=5XMZVEc6VKoe7hqSDtHi0%2FbjgjA%3D&response-content-disposition=inline%3B%20filename%3DHumanitarian innovation The state of the.pdf](https://s3.amazonaws.com/academia.edu.documents/37157269/OP9_Understanding_Innovation_web.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1525876630&Signature=5XMZVEc6VKoe7hqSDtHi0%2FbjgjA%3D&response-content-disposition=inline%3B%20filename%3DHumanitarian+innovation+The+state+of+the.pdf)
- Bloom, L., & Faulker, R. (2015). Innovation Spaces: Transforming humanitarian practice in the United Nations. Vol. 107. *WORKING PAPER SERIES*. URL: <http://www.rsc.ox.ac.uk/publications/innovation-spaces-transforming-humanitarian-practice-in-the-united-nations>
- Chesbrough, H. W. (2003). *Open Innovation. A New Imperative for Creating and Profiting from Technology*. Boston, Massachusetts: Harvard Business Review Press.
- Crane, A. & Seitanidi, M. M. (2014). Social Partnerships and Responsible Business. What, why and how? In Seitanidi, M. M., & Crane, A. (Eds.) *Social Partnerships and Responsible Business – a Research Handbook*. London: Routledge. 1-13.
- Daellenbach, U. S., McCarthy, A. M., & Schoenecker, T. S. (1999). Commitment to innovation: the impact of top management team characteristics. *R&D Management* 29(3), 199-208. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9310.00130>

- Dahan, N. M., Doh, J. P., Oetzel, J., & Yaziji, M. (2010). Corporate-NGO collaboration: Co-creating new business models for developing markets. *Long range planning*, 43(2), 326-342. URL: <https://www.sciencedirect.com/science/article/pii/S0024630109001125>
- Deloitte. (2015a). Promoting humanitarian innovation exchanges, developing models for humanitarian innovation knowledge bases. *London: Deloitte*. URL: www.alnap.org/resource/22141.aspx
- Deloitte. (2015b). The humanitarian R&D imperative, how other sectors overcame impediments to innovation. *London: Deloitte*. URL: www.alnap.org/resource/22142.aspx
- DeMeyer, A. (1999). Using strategic partnerships to create a sustainable competitive position for high tech start-up firms. *R&D Management*, 29, 323-326. URL: <https://doi.org/10.1111/1467-9310.00143>
- Denzin, N. K. & Lincoln, Y. S. (1998). Part 2: The Art of Interpretation, Evaluation and Presentation. In Denzin, N. K. & Lincoln, Y. S. (Eds.) *Collecting and Interpreting Qualitative Materials*. London: Sage Publications. 275-289.
- Dodgson, M. (1994). Technological Collaboration and Innovation. In Dodgson, M. and Rothwell, R. (Eds.), *The Handbook of Industrial Innovation*. UK: Edward Elgar Publishing.
- Elenkov, D. S., & Manev, I. M. (2005). Top Management Leadership and Influence on Innovation: the Role of Sociocultural Context. *Journal of Management*. 31(3), 381-402. URL: <https://doi.org/10.1177/0149206304272151>
- Fagerberg, J. (2005). Innovation: A guide to the literature. In Fagerberg J., Mowery, D. C., & Nelson, R. R. (Eds.) *The Oxford Handbook of Innovation*. Oxford, UK: Oxford University Press. 1-26.
- Galaskiewicz, J., & Colman, M. S. (2006). Collaboration between corporations and non-profit organizations. In Powell, W. W. & Steinburg, R. (Eds.), *The non-profit sector: A research handbook*. (2nd ed.). New Haven & London: Yale University Press. 80-204.
- Gray, I. & Hettiarachchi, M. (2014) Lessons from the frontline of humanitarian and technology company partnerships. *Betwixt and Between: e Journal of Partnership Brokering*, 1(4). URL: www.alnap.org/resource/22156.aspx
- Harrigan, K. R. (1994). Keeping the attraction alive. *Directors and Boards*, 18, 28-30 .

- Harrison, J. S., & St. John, C. H. (1996). Managing and partnering with external stakeholders. *Academy of Management*. 10(2), 46-60. URL: <https://doi.org/10.5465/ame.1996.9606161554>
- Hay, I. (2010). *Qualitative Research Methods in Human Geography*. 3rd edition. Oxford: Oxford University Press.
- High Level Panel on Humanitarian Financing. (2016). *Too important to fail – addressing the humanitarian financing gap*. [Report] URL: <https://reliefweb.int/sites/reliefweb.int/files/resources/%5BHLP%20Report%5D%20Too%20important%20to%20fail—addressing%20the%20humanitarian%20financing%20gap.pdf>
- Holland, J. H. (1975). *Adaption in Natural and Artificial Systems*. Ann Arbor: University of Michigan Press.
- Homans, G. (1961). *Social behavior: Its elementary forms*. New York: Harcourt.
- Innovation Norway (2018). *Opportunities in the UN-, humanitarian- and development market. Geneva – Nairobi- New York*. [Report] URL: <http://www.innovasjon Norge.no/en/start-page/noreps/recentactivities/report-launch-possibilities-in-the-humanitarian-market-in-geneva-nairobi-and-new-york/>
- Jacobini, S. & McCreary, K. (1994) Strategic alliances in high technology. *Red Herring*, 12, 38-39.
- Jamali, D., & Keshishian, T. (2009). Uneasy alliances: Lessons learned from partnerships between businesses and NGOs in the context of CSR. *Journal of Business Ethics*, 84(2), 277-295. URL: <https://link.springer.com/article/10.1007/s10551-008-9708-1>
- Jones, T., McCormick, D., & Dewing, C. (2012). *Growth Champions: The Battle for Sustained Innovation Leadership*. Chichester: John Wiley & Sons, Ltd.
- Kanter, R. M. (2000). When a Thousand Flowers Bloom: Structural, Collective, and Social Conditions for Innovation in Organization. *Entrepreneurship: The Social Science View*, 167-210. URL: <https://ssrn.com/abstract=1512270>
- Kelley, M. J., Schaan J-L., & Joncas, H. (2002). Managing alliance relationships: key challenges to the early stages of collaboration. *R&D Management*. 32(1). 11-22. URL: <https://doi.org/10.1111/1467-9310.00235>
- Kimberly, J. (1981). Managerial Innovation. In Nystrom, P. & Starbuck, W. (Eds.) *Handbook of Organizational Design, Volume 1*. Oxford: Oxford University Press. 84-104.

- Kline, S. J., & Rosenberg, N. (1986). An Overview of Innovation. In Landau, R. & Rosenberg, N. (Eds.), *The Positive Sum Strategy: Harnessing Technology for Economic Growth*. Washington DC: National Academy Press. 275-304.
- Kolk, A. (2014). Partnerships as Pancea for Addressing Global Problems? In Seitanidi, M. M., & Crane, A (Eds.) *Social Partnerships and Responsible Business – a Research Handbook*. London: Routledge. 15-44.
- Kolk, A., Van Dolen, W., & Vock, M. (2010). Trickle effects of cross-sector social partnerships. *Journal of Business Ethics*, 94(1), 123-137. URL: <https://link.springer.com/article/10.1007/s10551-011-0783-3>
- Kramer, M. & Kania, J. A. (2006). A new role for non-profits. *Stanford Social Innovation Review*, 4 (1), 32-41.
- March, J. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2/1. URL: <https://doi.org/10.1287/orsc.2.1.71>
- Mays, R., Racadio, R. and Gugerty, M. (2012). Competing constraints: the operational mismatch between business logistics and humanitarian effectiveness. *Global Humanitarian Technology Conference (GHTC)*, IEEE, Seattle, WA. 132–137. URL: <https://ieeexplore.ieee.org/abstract/document/6387035/>
- Ministry of Foreign Affairs of Denmark (2017). *Hack the Future of Development Aid*. [Report] URL: <http://um.dk/en/danida-en/Strategies%20and%20priorities/techvelopment/>
- Nielsen B. F, & Rodrigues Santos, A. L. (2013). Designing for multi stakeholder interests within the humanitarian market: the case of off-grid energy devices. *International Journal of Learning and Change*, 7(1), 49-67. URL: <https://doi.org/10.1504/IJLC.2013.056496>
- Nooteboom, B. (2000). *Learning and Innovation in Organizations and Economies*. Oxford: Oxford University Press.
- Nooteboom, B. (2002c) *Trust – Forms, Foundations, Functions, Failures and Figures*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar.
- Obrecht, A. & Warner, A. (2016). More than just luck: Innovation in humanitarian action. *HIF/ ALNAP Study*. London: ALNAP/ODI. URL: <https://www.alnap.org/system/files/content/resource/files/main/hif-alnap-2016-innovation-more-than-luck.pdf>
- O’Connel-Davidson, J. & Layder, D. (1994). *Methods, Sex and Madness*. London: Routledge.

- O'Connor, G. C. & McDermott, C. M. (2004). The Human Side of Radical Innovation. *Journal of Engineering and Technology Management*. 21(1-2),11-30. URL: <https://doi.org/10.1016/j.jengtecman.2003.12.002>
- OECD. (2016). *The Grand Bargain*. [Report]. URL [http://www.oecd.org/dac/conflict-fragility-resilience/docs/Grand Bargain final 22 May FINAL-2.pdf](http://www.oecd.org/dac/conflict-fragility-resilience/docs/Grand_Bargain_final_22_May_FINAL-2.pdf)
- Ramalingam, B., Scriven, K., & Foley, C. (2009). Innovations in International Humanitarian Action. Chap. 3 in *ALNAP 8th Review of Humanitarian Action*, edited by Active Learning Network for Accountability and Performance in Humanitarian Action. London: ALNAP. URL: https://www.researchgate.net/profile/Conor_Foley2/publication/242679493_Innovations_in_international_humanitarian_action_-_3_Chapter_3_Innovations_in_international_humanitarian/links/547f532e0cf250f1ed_bdc390.pdf
- Ramalingam, B., Rush, H., Bessant, J., Marshall, N., Gray, B., Hoffman, K., Bayley, S., Gray, I. & Warren, K. (2015). Strengthening the humanitarian innovation ecosystem. *Brighton: CENTRIM*. URL: www.alnap.org/resource/22181.aspx
- Ring, P. S., & Van de Ven, A. H. (1994). Developmental Processes of Cooperative Interorganizational Relationships. *Academy of Management Review*. 19(1), 90-118. URL: <https://doi.org/10.5465/amr.1994.9410122009>
- Rondinelli, D. A. & London, T. (2003). How corporations and environmental groups cooperate: assessing cross-sector alliances and collaborations. *Academy of Management Executive*, 17 (1), 62-76. URL: <https://doi.org/10.5465/ame.2003.9474812>
- Schuman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management*. 20(3), 571-610. URL: <https://doi.org/10.5465/amr.1995.9508080331>
- Schumpeter, J. A. (1942). *Capitalism, socialism, and democracy* (2nd ed.). New York: Harper.
- Scott-Smith, T. (2016). Humanitarian neophilia: the ‘innovation turn’ and its implications, *Third World Quarterly*, 37(12), 2229-2251. URL: <https://doi.org/10.1080/01436597.2016.1176856>
- Seitanidi, M. M. & Ryan, A. (2007). A critical review of forms of corporate community involvement: from philanthropy to partnerships. *International Journal of Nonprofit Voluntary Sector Market.*, 12(3), 247-266. URL: <https://doi.org/10.1002/nvsm.306>

- Selsky, J. & Parker, B. (2005). Cross-sector partnerships to address social issues: challenges to theory and practice. *Journal of Management*, 31(6), 849-873. URL: <https://doi.org/10.1177/0149206305279601>
- Sherman, S. (1992). Are strategic alliances working? *Fortune*, 24-29. September (21).
- Taylor-Powell, E. & Renner, M. (2003). Analyzing Qualitative Data. *Program Development and Evaluation*. G3658-12. URL: <https://learningstore.uwex.edu/assets/pdfs/g3658-12.pdf>
- Tidd, J., & Bessant, J. (2013). *Managing Innovation : integrating technological, market and organizational change*. United Kingdom: Wiley.
- UNICEF. (2015). *Innovation in the UN. A session of the Joint Meeting of the Executive Boards of UNDP/UNFPA/UNOPS, UNICEF, UN-Women and WFP*. [Report] URL: http://www.unicefstories.org/wp-content/uploads/2013/08/Innovation-in-the-UN_04.09.2015-1.pdf
- UN Org. (2013). *Procurement Manual*. [Manual]. URL: <https://www.un.org/Depts/ptd/about-us/procurement-manual>
- UN Women. (2017a) *Strategic plan: Making Innovation and Technology Work for Women*. [Strategy document]. URL: <http://www.unwomen.org/en/digital-library/publications/2017/7/making-innovation-and-technology-work-for-women>
- Van de Ven, A. H. (1986). Central Problems in the Management of Innovation, *Management Science*, 32(5), 590-607. URL: <https://doi.org/10.1287/mnsc.32.5.590>
- Van de Ven, A. H., Polley, D. E., Garud, R., & Venkataraman, S. (2008). *The Innovation Journey*. Oxford: Oxford University Press.
- Wettenhall, R. (2003). The rhetoric and reality of public private-partnerships. *Public Organization Review*. 3(1), 77-107. URL: <https://link.springer.com/article/10.1023/A:1023000128175>
- Yli-Huumo, J., Ko, D., Choi, S., Park, S. & Smolander, K. (2016). Where Is Current Research on Blockchain Technology? – A Systematic Review. *PLOS ONE* 11(10): 1-27. URL: <https://doi.org/10.1371/journal.pone.0163477>
- Yin, R. K. (1994). *Case Study Research. Design and Methods*. Second Edition. Thousand Oaks, London, New Delhi: Sage Publications.

Web Sources

- ALNAP. (2017). *Our Role*. Retrieved 28.08.2017 from <http://www.alnap.org/who-we-are/our-role>
- Bauerle, N. (2017). What is Blockchain Technology? *Coindesk*. Retrieved 30.08.2017 from <https://www.coindesk.com/information/what-is-blockchain-technology/>
- Business Dictionary. (2018). *Organizational Culture*. Retrieved 23.03.2018 from <http://www.businessdictionary.com/definition/organizational-culture.html>
- Del Castillo, Michael. (2017). How Blockchain Could Finally Unite the United Nations. *Coindesk*. Retrieved 08.03.18 from <https://www.coindesk.com/blockchain-finally-unite-united-nations/>
- Ethereum Org. (2017). *Ethereum Blockchain App Platform*. Retrieved 14.04.2018 from <https://www.ethereum.org>
- Facebook Event. (10.05.2017). Hackathon on Blockchain and Identity with UN Women and NOREPS. *Facebook*. Retrieved 04.08.2017 from <https://www.facebook.com/events/1322551734492051/>
- Humanitarian Coalition. (2017). *From Humanitarian to Development Aid*. Retrieved 28.08.2017 from <http://humanitariancoalition.ca/media-resources/factsheets/from-humanitarian-to-development-aid>
- Juskalian, R. (2018). Inside the Jordan refugee camp than runs on blockchain. *Technology Review*. Retrieved 24.04.2018 from <https://www.technologyreview.com/s/610806/inside-the-jordan-refugee-camp-that-runs-on-blockchain/>
- NOREPS. (2016a). *Safer Removal of Land Mines*. Retrieved 23.09.2017 from <http://www.innovasjon Norge.no/en/start-page/noreps/cases-test/rofi/>
- NOREPS. (2016b). *Compact and Sustainable Living for WFP Staff*. Retrieved 23.09.2017 from <http://www.innovasjon Norge.no/en/start-page/noreps/cases-test/ecocube/>
- NOREPS. (2017a). *Norwegian Emergency Preparedness System*. Retrieved 30.08.2017 from <http://www.innovasjon Norge.no/en/start-page/noreps/>
- NOREPS. (2017b). *2017 Call for proposals – Humanitarian innovation and preparedness grant*. Retrieved 12.12.2017 from <http://www.innovasjon Norge.no/en/start-page/noreps/recentactivities/innovation-norway--call-for-proposal--humanitarian-innovation-and-preparedness-grant-2017/>

- NTBinfo. (2017). Ny avtale mellom UN Women og Innovasjon Norge åpner dørene for norske gründere i globalt bistandsarbeid. *NTB Info*. Retrieved 06.04.2018 from <https://www.ntbinfo.no/pressemelding/ny-avtale-mellom-un-women-og-innovasjon-norge-apner-dorene-for-norske-grundere-i-globalt-bistandsarbeid?publisherId=89989&releaseId=14280977>
- OXHIP. (2017). *About*. Retrieved 28.08.2017 from <http://www.oxhip.org/about>
- Tapscott, D. & Tapscott, A. (2016). The Impact of the Blockchain Goes Beyond Financial Services. *Harvard Business Review*. Retrieved 05.01.2018 from <https://hbr.org/2016/05/the-impact-of-the-blockchain-goes-beyond-financial-services>
- UNGM (2017). *Annual Statistical Report on UN Procurement*. Retrieved 02.10.2017 from <https://www.ungm.org/Public/ASR>
- UNHCR. (2017). *Figures at a glance*. Retrieved 27.11.2017 from <http://www.unhcr.org/figures-at-a-glance.html>
- UNICEFinnovationfund (2018). *UNICEF Innovation Fund*. Retrieved 09.01.2018 from <https://unicefinnovationfund.org/#/about>
- UNOCHA. (2017). *Cash Transfer Programming*. Retrieved 23.09.2017 from <https://www.unocha.org/legacy/philippines/about-ocha-philippines/cash-transfer-programming>
- UN Women. (2017b). *Innovation and Technology*. Retrieved 26.02.18 from <http://www.unwomen.org/en/how-we-work/innovation-and-technology>

Appendix A: Interview guide - UN Women

1. Can you first start telling me about your role in UN Women? What are your responsibilities as innovation officer?

Organizing for innovation in UN Women

2. Can you provide one or more examples on how UN Women work with innovation?
 - Is innovation a central priority in UN Women?
 - I've learned that you have an innovation strategy. Can you explain how you work to follow that strategy?
3. As I understand, the innovation unit works across all the other units and programs. Do you feel that the rest of the organization is open to innovation and thinking in new ways?
 - How does the unit work to generate new ideas?
 - Do you usually involve other organizations outside of UN Women in innovation projects? (like other UN agencies/NGOS/the private sector etc.)
 - If so, how do you work with these other organizations/companies?
 - In your experience, what are the possibilities in such collaborations?
 - What are the challenges when working with other organizations/companies in innovation projects?
4. How are innovation projects usually funded in UN Women?
5. Are the end users usually included in innovation processes?
 - If so, at what stage in the innovation process are they included?

Organizing the blockchain project in particular

6. Can you tell me how the UN Women blockchain project started?
 - Who identified the need for an identity/cash transfer solution?
 - Why did you decide to go for blockchain technology in particular?
 - What does UN Women want to achieve through this project?
7. Do you collaborate or exchange information and ideas with the other UN agencies working with blockchain technology?
8. What is the private sector's role in this project?
9. What is UN Women's role in the project?
10. Is there risk involved in this project?

- What type of risk?
 - How do you work to manage this risk?
11. What would you say have been the biggest learnings for UN Women throughout this process?
 12. As I understand, the next event in this project is the blockchain lab in New York.
What is the purpose of this event?
 13. Is there anything else you would like to add?

Appendix B: Interview guide - private company

1. Can you first start by telling me a little bit about your company?
 - What is your role in the company?

The blockchain project

1. First, can you tell me how your company got engaged with the UN Women Blockchain Project?
2. Why did you decide to join the hackathon?
 - What expectations did you have before the event?
3. At the hackathon, there were many participants, experts on humanitarian crisis and technical experts. How did you feel that these different groups of people interacted?
 - Did you collaborate with any of the other groups?
 - What role did UN Women have during the hackathon?
 - How did your team work to collect the right information?
4. What would you say are the most important take-aways from the hackathon for your company?
 - Did you learn anything? If so, what?
5. Was anything challenging during the hackathon?
6. How has the journey for the company been since the hackathon?
 - What is your next move in regard to the UN Women project?

Collaboration and communication with UN Women

1. Had you heard of UN Women before you got involved with the blockchain project?
 - What impression did you have of the organization?
2. How would you describe the interaction between your company and UN Women during this project?
 - How often have you had contact with them?
 - Who have you been in contact with?
3. What has been UN Women's role in this project?
 - Is there anything they could have done differently to ensure better collaboration?
4. How committed do you believe UN Women is to this project?
5. Do you feel that they have put a follow-up process in place for the hackathon winners?
6. Would you and your company like to still be part of this project and continue developing a solution for UN Women?
 - Why? Why not?

Appendix C: Overview of data collection

Interviews

Who	When	Length
Person working with innovation in the UN system	03.10.17	Ca. 40 mins
Company 1	24.10.17	Ca. 45 mins
Company 2	02.11.17	Ca. 90 mins
“US Blockchain Company”	16.11.17	Ca 60 mins
UN Women 4	17.11.17	Ca. 90 mins
Person on the hackathon team of company 4	20.11.17	Ca. 60 mins
Company 4	21.11.17	Ca. 90 mins
“Peter”	02.12.17	Ca. 90 mins
UN Women 1	12.12.17	Ca. 60 mins
UN Women 2	15.12.17	Ca. 45 mins
Innovation Norway representative	12.01.18	Ca. 60 mins
UN Women 3	29.02.18	Ca. 30 mins
Company 3	30.02.18	Ca. 30 mins
UNOPS representative	01.02.18	Ca. 90 mins
UN Women 4	02.02.18	Ca. 60 mins

Observations

What	When	Where
UN Women hackathon at Katapult Future Fest	10-13 May 2017	Oslo, Norway (Oslo House of Innovation)
Follow-up workshop with winning teams from the hackathon	16. June 2017 (2 hours)	Oslo, Norway (Innovation Norway HQ)
Prep phone meeting with UN Women and a company attending the lab	17.01.2018	Conference phone-call
Blockchain Lab	30. January- 1. February 2018	NYC, USA (UN Women HQ)

Appendix E: Consent form for informants

My name is Emilie Margrethe Skogvang, and I am a student at the master program Technology, Innovation and Knowledge at the University of Oslo. I also work part time in Innovation Norway. My thesis will conduct a case study of the UN Women Blockchain Project funded by Innovation Norway where the UN Women have involved several private companies to develop a digital identity and cash transfer solution for women and girls in humanitarian settings. The master project started in May 2017 and will end in May 2018.

The research data will be gathered through in depth interviews with people who are connected to the innovation project, and through observation of key events in the project. The information gathered will not be of a sensitive character, but will mainly focus on the innovation process and collaboration across the humanitarian and private sector in the blockchain project. It is voluntary to participate as an informant, and the informant can withdraw from the study at any point. All data will be anonymized and treated as confidential information. The thesis will be published and publically available at DUO website after submission.

Contact details student:

Emilie Margrethe Skogvang

+47 922 95 771, email: Emilie.skogvang@gmail.com / emilie.skogvang@innovasjon norge.no

Contact details supervisor:

Taran Mari Thune

+44 228 41 634, email: t.m.thune@tik.uio.no

- I want my name to be anonymized
- I want my professional title to be anonymized
- I want my company/organization to be anonymized

I have received information about the research project, and I consent to participate.

Date/ Signature informant