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Identifying Policy Factors within the process of ICT4D

The development of a policy framework to enable beneficial use of ICTs for national and community objectives.

Partial copy due to confidentiality reasons

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The development of a policy framework to enable beneficial use of ICTs for national and community objectives.

Master Thesis Project[1]
Thesis submitted for the partial fulfilment of the requirement for the degree of Master of Science in Systems Engineering, Policy Analysis and Management

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Preface

This study is a masters thesis project and is considered a final step within the master of Systems Engineering, Policy Analysis and Management (SEPAM) at the faculty of Technology, Policy and Management (TPM) of the Delft University of Technology. The study was facilitated by the Ministry of Communication and Information Technology (MCIT) in Cairo, Egypt. The study entailed a qualitative analysis with an important empirical part in the form of interviews with several actors within the field of social development.

I have been very fortunate to draw on a base of highly intelligent and encouraging individuals that supported the research in many ways. A word of thanks is therefore in order. First of all, I would like to thank my first supervisor Jan van den Berg for his non-traditional way of thinking and the freedom that he allowed me to have while conducting the research. I highly appreciate the encouragement and interesting discussions we had on the subject of social development in the developing countries and the many pitfalls that development organizations up until this day encounter. Furthermore, I would like to thank my second supervisor, Martin de Jong, for his fresh perspective on the research from a more institutional point of view. Also, I am very grateful to Marijn Janssen, chairman of the graduation committee. Marijn has been a point of inspiration throughout my entire study. I have always enjoyed working with Marijn, from being a student-assistant to being a graduating student under his supervision. In general I would like to thank the entire committee for allowing me the freedom to go and conduct the research abroad, making it not always as easy to stay in contact and discuss the different steps of the research. Therefore, I am very grateful for the trust that the committee had in me.

I would like to thank Ms. Jolien Ubacht for her valuable feedback on the research proposal and her insights on how to set up the research. Jolien has been very helpful in determining my research methodology and setting up my research questions. Her feedback was the basis on which my research is founded and what got me excited to go and conduct the research.

The Ministry of Communication and Information Technology proved to be a highly inspirational environment wherein I was allowed to conduct the research in my own way while receiving the highest quality of supervision. First of all, I would like to thank Dr. Hoda Baraka, first deputy to the Minister. Dr. Baraka was my first point of contact and was immediately interested in the proposal that I submitted. She has been very encouraging and accommodating and has given me the opportunity to really spend the time necessary to conduct the research by extending my stay with an additional period. Furthermore, I am very thankful to Ms. Nevine Tewfik, deputy director of the department of international relations. Ms. Nevine and I go back to September 2007 where she invited me to speak at an international conference. She also displayed a great interest in the research and despite her busy schedule, allowed time to adequately supervise me and accommodate me in any way that was necessary.

I am also very grateful to all interviewees who have provided me with the necessary information to conduct the research. Your insights were very helpful and a first requisite to the execution of the research. I would also like to thank Diana and Tim for their valuable feedback on my research proposal and their coaching throughout the entire research process. Last but not least, I would like to thank my parents for their continuous encouragement during my entire education.

Executive Summary

Social development is considered a broad field in which different mechanisms can be utilized to create economic impact within the lives of disadvantaged individuals. One of those mechanisms is the use of Information and Communication Technology (ICT). From this development, a whole new field called ICT for Development (ICT4D) surfaced in which technology is utilized to help further the objective of social development. This notion has been a point of discussion and an important topic on the agendas of many development agencies such as the ITU (International Telecommunications Union), the UNDP (United Nations Development Program), UNESCO (United Nations Educational, Scientific and Cultural Organization) and GAID (Global Alliance for ICT and Development).

When addressing the topic, literature tends to concentrate mainly on the technology domain and often neglects the information and communications aspects. Furthermore, top-down approaches are regularly implemented without involving the user and his needs. The project designer often sees the things that are lacking in a community in terms of technology and neglects to incorporate basic methods and tools in place that help communities facilitate in their self-sufficiency. This way of working is therefore considered one-sided; however recognition of this and its disadvantages are becoming apparent. Furthermore, realisation has occurred that social and human development is often a first responsibility of the governing body of a country. Since the government often functions as an initiator and creator of policies and projects on social development and reaches out to private and civil partners to accomplish social objectives, we need to consider the role of governance and that having a 'good governance' structure could be a first requisite to social development. It is therefore important to consider a new framework, which incorporates and assists 'good governance' practices and is able to define policies, instruments and solutions both on a national and community level. The aim of the research therefore can be summarized by the following main research question:

What policy framework enables beneficial use of ICTs on both a national and community level?

The research focused on and was executed within a developing country: Egypt. This country has taken significant steps forward in providing access to ICTs in developing communities and is supportive of these kinds of projects and developments. The research was executed under the umbrella of the Ministry of Communication and Information Technology (MCIT). The methodology and scope of the final product was kept general so that different projects in different countries can benefit from the policy framework.

When we look at opportunities for a new framework, we can find literature that points to a certain direction towards which a new policy framework must move for it to effectively design social development projects. Vaughan (2006) for example has designed an alternative community structured policy framework. However, these kind of frameworks found in existing literature are stated on a very high level, while a precise and structured framework that is able to define clear governance measures and in which concrete projects and activities can be designed to benefit both national and community objectives is necessary. Furthermore, the policy frameworks of Vaughan (2006) are characterized by either a top-down or a community approach. Although she expresses the need for a more balanced model, there currently seems to be no policy framework available that

encompasses both approaches in an integrative way to benefit both national and community objectives.

Next to this gap within existing policy frameworks, there are more practical problems that social development workers often run into. First of all, there are severe resource constraints (both in terms of finances and human capacity) which in combination with poor governance lead to ineffective projects. Furthermore, we often detect hypes (such as telecentres) that are being deployed and implemented on a copy-paste manner, thus neglecting the real needs and wishes of developing communities. Also, there exists an inadequate understanding of economic activities and human capital present in developing communities and an inability to foster these to increase development opportunities. Finally, we often see that members of developing communities don't know how the services and projects implemented complement their way of working and their daily activities, resulting in little or no response.

The issue is clearly a complex one that involves many factors, all heavily interlinked and directly or indirectly related to governance practices. Performance or actions taken on one level determine outcomes on other levels. It is therefore important and relevant to take a piece of this complexity and try and untangle it. Consequently, the research specifically concentrated on Egypt as a case study and a small and focused dataset was used to analyse the data in order to come up with an overall picture regarding Egypt's project development and governing performance.

Using grounded theory, the research did not try to surface the 'truth' but to conceptualize what takes place by using empirical data. In a way, it is exactly the opposite of many forms of academic research in which the researchers has predefined hypotheses and conducts the research to examine them. Within GT, it is prohibited to have these predefined hypotheses; instead they are formulated after conducting the research to fit the data. Therefore, GT is more an inductive approach, in which theory is inductively discovered in data that has been systematically analysed.

The research followed four main stages that all lead up to discovering the hypotheses and grounding the theory. First, data was obtained from various sources. Further data was obtained in the second stage of the research, which consisted of interviewing relevant participants. Interview transcripts were collected and these were used in the third phase of the research: coding the data. Eventually, the fourth stage lead to the construction of a theory formed from hypotheses that in turn were extracted from previously defined theoretical codes.

The analysis has resulted in 22 core factors that must be considered and implemented within the policy framework.

Due to reasons of confidentiality, this specific copy of the report will not provide any results, conclusions or recommendations. For questions regarding these elements of the research, please reach out to the author: Hanane Ouna.

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1. Introduction

*"If we knew what it was we were doing, it would not be called research, would it?" (*Albert Einstein*)*

Social development is considered a broad field in which different mechanisms can be utilized to create economic impact within the lives of disadvantaged individuals. One of those mechanisms is the use of Information and Communication Technology (ICT). The technology creates opportunities to build on existing economic activities that are employed by the poor and help make these activities more effective so that full project potential can be harnessed and the economic outcome for these individuals is improved. From this objective, a whole new field called ICT for Development (ICT4D) surfaced in which technology is utilized to help further the objective of social development. ICT4D is therefore an interesting field to explore and determine how technology fits within the livelihoods of the disadvantaged individuals.

1.1. Research Background

ICT4D has always been a point of discussion and an important topic on the agendas of many development agencies such as the ITU (International Telecommunications Union), the UNDP (United Nations Development Program), UNESCO (United Nations Educational, Scientific and Cultural Organization) and GAID (Global Alliance for ICT and Development). These international institutions promote the use of technology to foster development opportunities by, for example, holding international conferences. The ITU holds both regional and global telecom conferences wherein social development is an essential element of discussion. Recently, GAID underlined the importance of ICT's and youth to help further development objectives within a global forum.

Literature often defines the topic in several ways. Within this proposal, ICT4D is interpreted as a means to lay the foundation for investments and development through (UNDP, 19/09/07):

- Catalyzing private sector investment and increasing the sustainability and reach of small and medium scale enterprises;
- Facilitating the delivery of agricultural extension, financial and business support services in under-served rural areas;
- Facilitating learning and exchange and thereby helping to scale up the delivery of education.

When addressing the topic, literature tends to concentrate its focus mainly on the technology domain and often neglects the information and communications aspects. Furthermore, top-down approaches are regularly implemented without involving the user and his needs. The project designer often sees the things that are lacking in a community in terms of technology and neglects to incorporate basic methods and tools in place that help communities facilitate in their self-sufficiency. This way of working is therefore considered one-sided; however recognition of this and its disadvantages are becoming apparent. Furthermore, realisation has occurred that social and human development is often a first responsibility of the governing body of a country. Since the government often functions as an initiator and creator of policies and projects on social development and reaches

out to private and civil partners to accomplish social objectives, we need to consider the role of governance and that having a 'good governance' structure could be a first requisite to social development. As former Secretary-General of the United Nations, Kofi Annan, stated: "Good governance is perhaps the single most important factor in eradicating poverty and promoting development". Therefore, we need to consider a new framework, which incorporates and assists 'good governance' practices and is able to define policies, instruments and solutions both on a national and community level. The aim of the research can therefore be summarized by the following main research question:

What policy framework enables beneficial use of ICTs for on both a national and community level?

The research focused on and was executed within a developing country: Egypt. This country has taken significant steps forward in providing access to ICTs in developing communities and is supportive of these kinds of projects and developments. The research will be executed under the umbrella of the Ministry of Communication and Information Technology (MCIT). The methodology and scope of the final product is kept general so that different projects in different countries can benefit from the policy framework. Furthermore, there is no illusion present that after design, all heads of state will adopt and effectively use the proposed framework. Ease of adoption will be an issue, however the main purpose of the research is to develop a new approach to project design that incorporates both national and community objectives and that may inspire others to think and perform along the same lines.

Qualitative Research and Grounded Theory

Within this research, the main methodology used to analyse all information and construct the policy framework can be considered as a qualitative approach wherein a small and focused dataset is taken as input. This dataset is gathered by participating in the setting (working within the ministry instead of functioning as an external consultant) and conducting in depth interviews. Reflection plays an important role; the entire research process is reflected upon as well as the role of the researcher (see also chapter 6: reflection). Furthermore, coding plays an integrative role in which information is carefully coded and general themes are discovered in a consistent manner. Hypotheses are formed after analysis of all information; the research therefore works in an inductive manner in which we move from more specific observations to a broader theory and generalisation.

Within this field, the chosen methodology to collect the data is called Grounded Theory (GT). Wikipedia defines GT as "a systematic qualitative research methodology in the social sciences emphasizing generation of theory from data in the process of conducting research" (Wikipedia, 19/02/08). Wikipedia furthermore describes that one goal of GT is to formulate hypotheses after analysis based on conceptual ideas: "GT does not aim for the "truth" but to conceptualize what's going on by using empirical data (Wikipedia, 20/02/2008). Furthermore, one must acknowledge that this conceptualisation can ultimately take "infinite forms" (dependent on how the researcher personally views the reality) and is interpretive and therefore subjective.

Since 1967, when the official publication on grounded theory was presented by its founders, Glaser and Strauss, they found themselves disagreeing on the manner in which GT should be used, resulting in two different paradigms. "The difference is on the subject whether the researcher uses a well

defined "coding paradigm" and always looks systematically for "causal conditions," and "consequences" in the data, or whether theoretical codes are employed as they emerge in the same way as substantive codes emerge, but drawing on a huge fund of "coding" families (Wikipedia, 19/02/08). This last approach is a more suitable one for the research at hand, since it does not limit the researcher to predefined information and allows for a range of freedom when gathering and comparing data. This is important, since similar research is not available and therefore it is not possible to draw on previously defined hypotheses and results. Furthermore, due to the novelty of the research, it is not possible to predict the level of detail of the data.

Even though this research will follow the Glaser paradigm of GT, it will not consider the pure form of the Glaser approach in which he depicts that "all is data". This concept entails that not only interview or observational data but also surveys or statistical analyses can be used in the comparative process as well as literature data from science or media or even fiction (Wikipedia, 19/02/08). The research will follow a qualitative approach in which mathematical results and analysis will not be considered but a small and focused dataset, extracted from 7 interview transcripts, will be taken as a basis for analysis. This is a more preferred way since the research limits itself to Egypt as a case study and aims to provide a concrete methodology and framework for Egypt's case to effectively design social development projects. In order to do so, the research must try and reach a significant level of detail within a small and focused sample instead of using all information that simply comes the researcher's way. Summarizing, the approach is still based on the Glaserian methodology (not using any predefined coding paradigm), but follows the more general lines of qualitative analysis as is done by Charmaz (2006).

When looking at the objective of the research and the methodology of GT, we can specify three main research steps that must be taken to accomplish a well founded qualitative research. These steps are depicted in figure 1.1. We first start out with the analysis that consists of a conceptualisation phase in which we construct *a view* on reality wherein social development takes place. Next to conceptualisation, data obtainment is crucial since further analysis is founded on a small, but focused data set. Both conceptualisation and data obtainment are facilitated by literature research while data obtainment is also supported by surveying. A next step would be the design of a new policy framework for social project development, supported by desk research. A last step (and specifically important within qualitative research) is reflection during which the researcher takes a moment and reflects on the entire research process, objectives, methodologies, findings and his personal role.

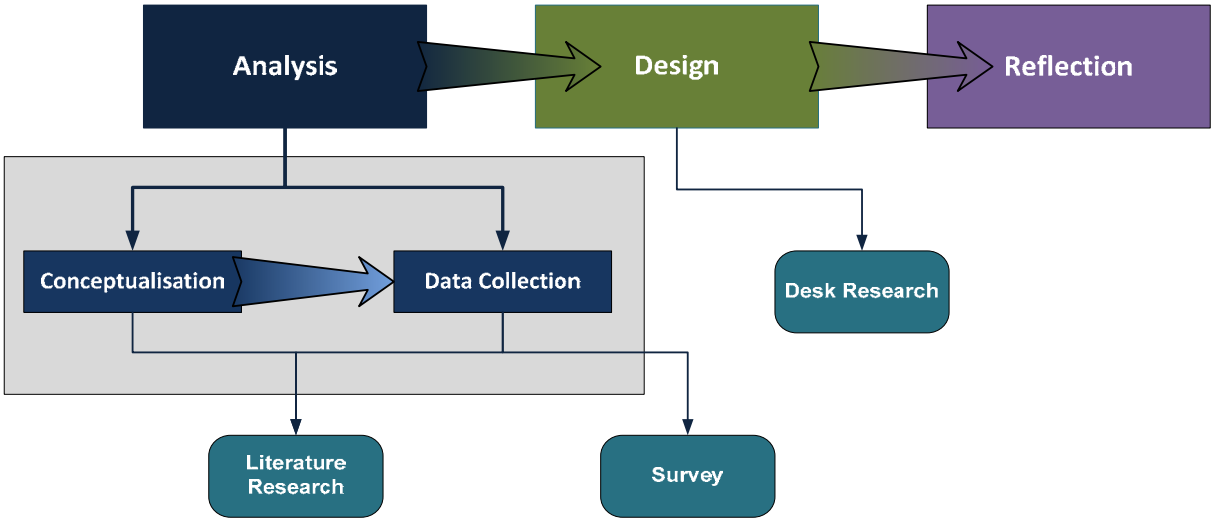

Figure 1.1: Qualitative steps

1.2. Research and Sub-questions

Current literature often points to a certain direction towards which a new policy framework must move for it to effectively design projects and utilize ICTs for the creation of opportunities for disadvantaged communities while keeping in mind national objectives. Vaughan (2006) for example has designed an alternative community structured policy framework. However, these kinds of frameworks are stated on a very high level, while a precise framework that supports governance practices and in which projects and activities can be designed to benefit both national and community objectives is necessary. Furthermore, the policy frameworks of Vaughan (2006) are either characterized by a top-down or a community approach. Although she expresses the need for a more balanced model, there currently seems to be no policy framework available in literature that encompasses both approaches in an integrative way. Therefore, the main question of the proposed research is:

What policy framework enables beneficial use of ICTs on both a national and community level?

To effectively answer this question, it is important to break down the question and research into manageable parts. The research must keep in mind that it is intended to result in a new *policy* framework. By incorporating from the start all actors involved, both from the national (MCIT) and the community level, the framework is therefore built on support in the form of the commitment of these actors.

First of all, it is important to consider a preliminary or 0-question in which we look at the reality that we operate in. This question supports a conceptualisation phase in which we look at the current views, accomplishments and problems within the field of ICT4D. Here we take a broad stand and analyse this reality by using international literature that tries to define the current field of ICT4D. We look at how we can learn and build on both best practices and solutions while avoiding the common pitfalls and barriers that many development workers run into while operating within the field of ICT4D. It is important to realise that this conceptualisation and realisation of the current situation is

of influence on the way that the research is conducted and the view that the researcher holds in general.

Even though the GT methodology does not allow any preconceived notions, we must acknowledge that it is simply impossible to conduct research with a completely blank canvas, ignoring all past experiences, knowledge and input gathered within the environment that the researcher operates in. The belief that existing policy frameworks do not live up to their full potential is already a first assumption on which the research is based. Therefore, the claim that a researcher can enter a research process without any preconceived ideas or notions does not hold up entirely. As Charmaz (2006) explains: "what you see in your data relies in part upon your prior perspectives. Rather than seeing those perspectives as the truth, you must try and see them as representing one view among many".

The 0-question is formulated as followed:

- What is the reality in which the field of ICT4D exists and operates? *(conceptualisation)*

Again, there are many realities and the forming of one of them is highly dependent on the literature found, discussions held, personal experiences and many other sources of influence. Therefore, one should never regard the found reality as the truth, but see it as one of the perspectives out there. It is therefore not relevant to try and formulate an exact answer to this question, since it is a view amongst many others and a certain concept that exists in the mind of the researcher but does not allow to be exactly formulated on paper. Chapter two does however give an overview on this reality by explaining the current situation in terms of different views and beliefs, accomplishments and structural problems. One could regard this as the reality that the researcher personally holds. However, the researcher should not have this reality lead him or her during the research process, but it would also be very ignorant to state that the researcher is not influenced in some way by this view on reality.

Next to the 0-question, the following sub-questions are of relevance:

a. How are ICTs currently used to support development on a national level? *(descriptive)*

It is important to analyze what is already in place and effectively being used by the ministry to support development. Here we take a closer look at the ministry's governing and overall performance in the field of social development. The general measures for creating development opportunities on a national level are often clear and can be found in existing literature, however this research question examines specifically for MCIT what already is in place. Does the ministry use a standard approach for developing and implementing projects, are there any performance indicators that are taken into account and used when evaluating the projects, how do the projects tie into the ministry's objectives and strategy? The aim in short is to examine the governing abilities of MCIT and how management approaches project design and implementation.

b. How are ICTs currently used to support development on a community level? *(descriptive)*

As mentioned above, the measures for creating development opportunities on a national level are often clear; however the same measures for community based development are rarely made explicit.

The question examines (in the same line as question a) how civil society approaches project design and implementation to guarantee development in disadvantaged communities.

c. What are, according to both the national and community level, the specific needs for a new framework? *(analysis)*

Now that both approaches have been assessed, it is important to examine the specific wishes or (governance) necessities that should be incorporated within the framework. One can expect that the parties already have an idea of what factors or actions would serve the objective of social development in a more efficient manner. Since we are using GT as a research methodology, it is necessary to obtain this information since the researcher is not allowed to incorporate personal ideas or notions. The actions of the researcher are limited to analyzing the information and coming up with an overall picture of the situation. Therefore, this question provides the researcher with valuable information that serves as a basis for constructing the framework.

d. How do the identified factors tie together? *(design)*

This question focuses on the initial design of the framework taking into account all previous sub-questions in terms of current use (of both MCIT and civil society and how to build on that) and the needed measures or factors that have been identified by both sides and that must be incorporated within the framework. Here, the researcher takes all information and tries to identify commonalities between the factors which in the next step of actually constructing the policy framework will help create a structure for the framework.

All four sub-questions ultimately support the answering of the main research question. Furthermore, the questions are posed in a timely manner (from a to d) to manage the research in a concise manner. Figure 1.2 summarizes the flow of sub-questions:

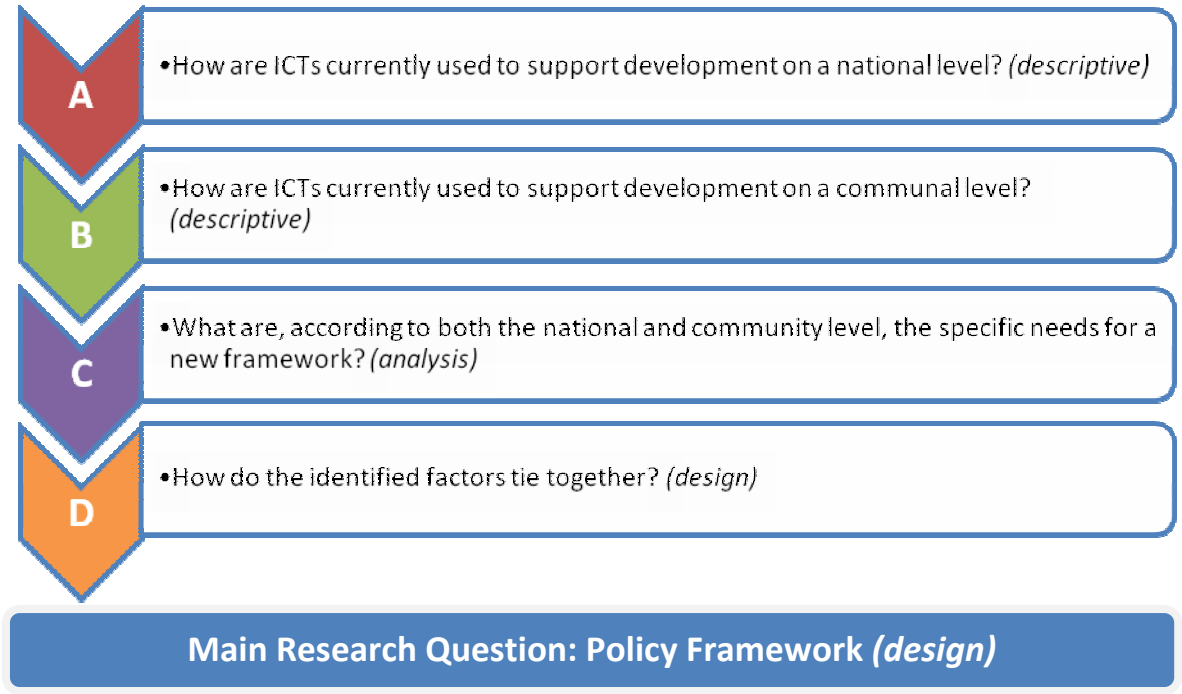

Figure 1.2: Flow of Sub-questions

Next to these four sub-questions, an additional question was posed to establish a side-product for the problem owner (and initiator of the research), MCIT. This however isn't a question that is of direct importance to answering the main research question and can therefore be considered as a *side-question*:

Which main themes have surfaced as being significant within social project development? *(analysis)*

Apart from the new policy framework, which is a final step to answering the main research question, it is important to discuss with MCIT which main themes surfaced during the analysis of project development approaches that could be of help to improve management's governance performance and incorporate the community objectives and approach within national project design. This step can be considered as a quick-win for MCIT that can immediately be taken into account within the next project design.

1.3. Research Methodologies and Deliverables

All previously defined objectives need to be taken into account to design a specified plan for all activities. This plan describes the different phases of the research project, the activities within these phases, the time and methodologies required to execute the phases and the deliverables. Within the research, three methodologies were used to support the answering of the sub-questions, ultimately resulting in a new policy framework and thus the answering of the main research question. These were literature research, survey and desk research. All methodologies are equally important; however the survey methodology does offer an additional advantage. By interviewing the experts, they were given an opportunity to speak their mind and complement the documented information. This ensured that all relevant actors were part of the process and thus committed to the final outcome.

Phase one concentrated on the national side of the research. During this phase, several projects were looked at by examining MCIT project reports. Next to that, interviews were held with representatives from those projects to extract additional information and obtain important framework factors. Literature research and interviews were used for this purpose and the qualitative data sources are literature in the form of project reports and expert information. The time required was three weeks, resulting in a first assessment on MCIT project design and implementation and the needed factors for a new framework.

Phase two is very similar to phase one in its approach, but concentrated on the community side of the research. Several projects executed by civil society were looked at by examining again project reports and conducting interviews with representatives to receive additional information. Again, literature research and interviews were the methodologies within this phase and the qualitative data sources are similarly literature in the form of project reports and expert information. Approximately three weeks were required and the final result was an assessment on community project design and implementation and the needed factors for a new framework.

During these first two phases, 7 interviews were conducted with representatives from the social development arena in Egypt. These representatives were either part of MCIT or in direct contact and

cooperation with MCIT. The representatives were chosen on their relevance according to recent project development, ties and cooperation with MCIT and expertise in Egypt's social development field. Relevance was determined based on project literature and through guidance of Ms. Nevine Tewfik, research supervisor at MCIT. The number of interviewees was of course not indefinite but dependent on the willingness of individuals to agree with an interview and their availability in the months of May and June 2008 (during which the interviews took place).

Phase three incorporated all findings of previous phases (national assessment, community assessment and the identified factors for the framework) to design an initial structure for the policy framework. Desk-research was used to look at commonalities between factors while building on existing strengths of the two assessed approaches. The activity took place within two weeks, resulting in an initial structure constructed using the identified framework factors.

Phase four continued with this initial structure and added two main elements. First, specific relations were identified between the structures and the factors within them. Next, a prioritization and hierarchy was added since certain factors are an initial requisite to others. Desk research was used for this purpose and the activity took place in two weeks time, resulting in a final policy framework.

Phase five was more of a side-phase resulting in a side-product to be presented to the owner of the project, MCIT. Within this phase, the main themes that surfaced from comparing both approaches to project design and implementation were presented. This allows MCIT to take into account imperative indicators within their approach to project development. Desk research was used to execute this phase and one week was required.

Another four weeks were spent writing the final thesis report, formulating an answer to the main research question and extracting final conclusions, recommendations and possible future research. This time was furthermore used to write a scientific paper. An extension of two weeks was reserved to prepare a presentation and to take care of other possible issues. In summary, table 1.1 provides the entire research plan in terms of phases, activities, methodology, time and deliverables.

Table 1.1: Research plan

Phase	Activity	Methodology	Time	Deliverable
Phase 1	1. Research the project reports 2. Conduct interviews 3. Research the interview findings	Literature research Survey: Interview	Three weeks	Assessment 1 – National MCIT
Phase 2	1. Research the project reports 2. Conduct interviews 3. Research the interview findings	Literature research Survey: Interview	Three weeks	Assessment 2 – Community
Phase 3	Construct initial	Desk research	Two weeks	Initial Framework

	structure			Structure
Phase 4	Model Design	Desk research	Two Weeks	Final Policy Framework
Phase 5	Main theme selection	Desk research	One week	Important Themes
Wrap-up	1. Answering main research question 2. Extracting final conclusions 3. Writing	Desk research	Four weeks	Final Thesis report Scientific Paper
Extension	1. Preparation presentation 2. Other issues	Desk research	Two weeks	Presentation

Figure 1.3 gives a schematic overview of the entire research approach, encompassing all relevant information in the form of the different phases, research questions, the information and time needed and the deliverables. This figure indicates how the different phases and research questions tie into each other to complete the answering of the main research question.

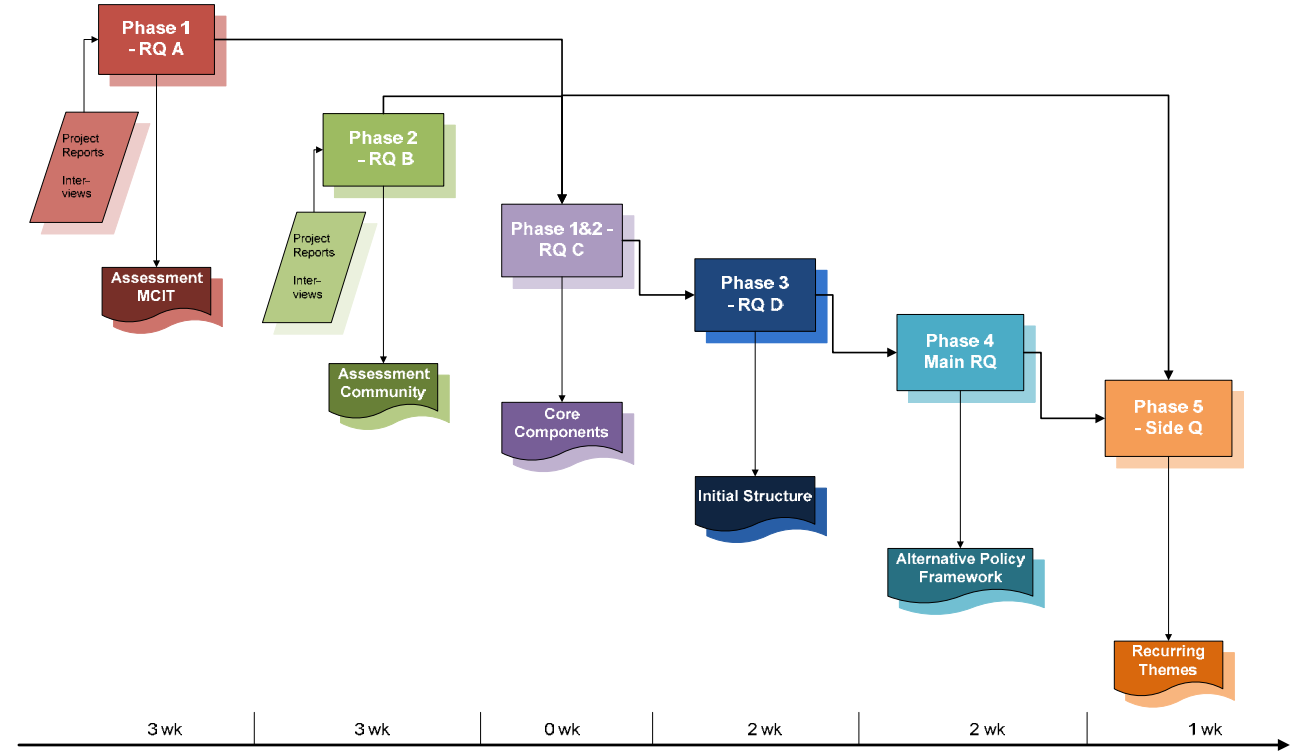

Figure 1.3: Research approach

1.4. Thesis outline

Within the previous paragraphs, a short introduction has been given on the problem domain and the research focus with its main research question and sub-questions. The thesis continues with giving an understanding of ICT4D, the current problems within the field and possible solution space in chapter two, the theoretical background.

Chapter two therefore focuses more on the theoretical findings that were explored during the start of the research and serves as a conceptualisation step to define *a view* on reality. First, the chapter examines in paragraph one various definitions of the term 'policy framework' and what these definitions have in common. Next, the main problems of using ICT to foster social development are discussed, these problems vary greatly and therefore it is important for the reader to have an overview of what problems social development workers run into when utilizing ICT4D. Paragraph three continues with a discussion regarding the importance of 'good governance' within social development. Paragraph four provides a short overview on common problems with current development frameworks. Furthermore, different ICT4D frameworks have been examined. Two main frameworks are discussed within this thesis along with their shortcomings, so that the new framework can build on the strengths of these two frameworks, but also avoids the same problems and pitfalls of the frameworks. Lastly, chapter two provides the reader with an explanation on why Egypt was chosen as a case study.

Chapter three will move us from a theoretical perspective into the research methodology of GT that was used continuously throughout the entire research. Four main stages were identified within the analysis and a description of methods and guidelines are presented. The analysis started out with the method for obtaining data and continued with the interview process to extract informal information. Furthermore, a third part of the analysis focuses on coding the data while the fourth phase concentrated on how to extract a grounded theory from all information gathered and analysed.

Chapter four presents the findings of the research and in chapter five the final conclusions and recommendations are presented. Furthermore, chapter six provides room for reflection. **Due to reasons of confidentiality, these chapters are not included in this copy of the report. For questions on these specific elements of the research, please contact the author.**

Figure 1.4 gives an overview of the entire scope of the thesis and the line of thought when reading the chapters:

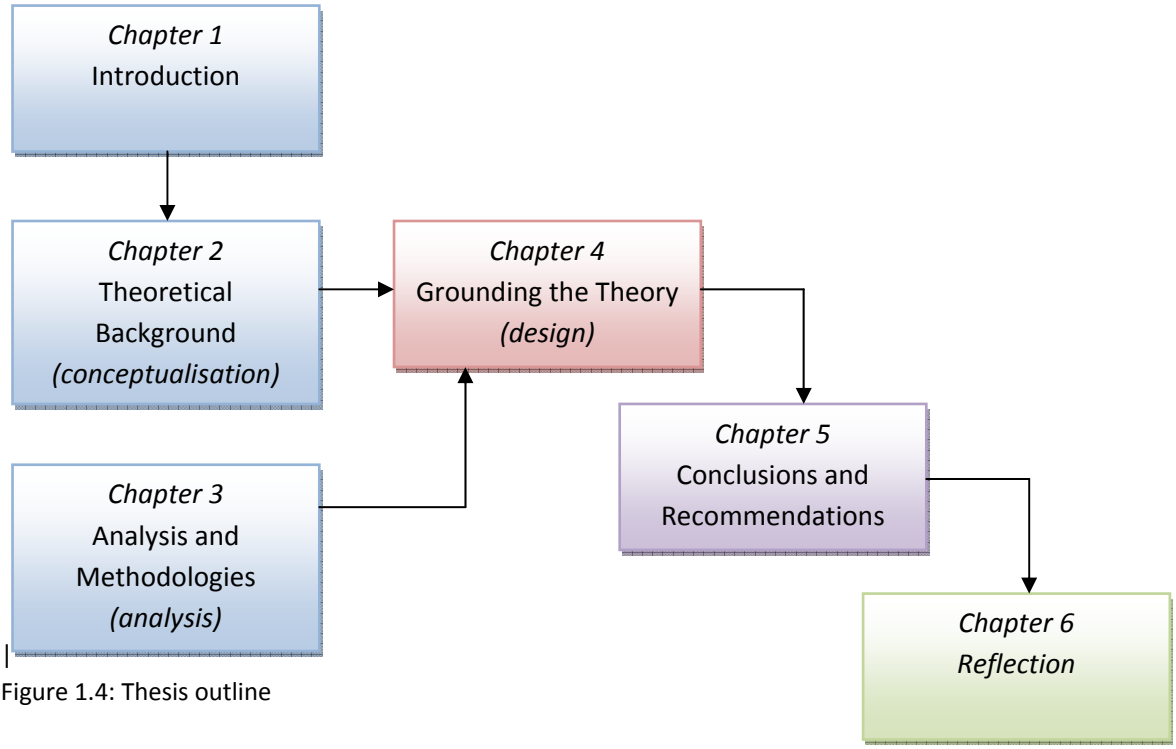

Figure 1.4: Thesis outline

2. Conceptualisation of *a* reality

"In theory there is no difference between theory and practice. But, in practice, there is." (Jan L.A. van de Snepscheut)

This chapter will try and identify *a* reality in which the field of ICT4D operates in and serves as an answer to the 0-question. It is important to acknowledge that this reality is a personal one that exists amongst many others. It is a reality founded on existing literature, expertise, personal experiences and other sources of information that have influenced the researcher in some way. The chapter provides a conceptualisation of this reality in terms of defining a '*policy framework',* a general problem perception regarding ICTs and their role within development, the importance of 'good governance' for social development, the problems and gaps with the current policy frameworks and *the fit of Egypt as a case study within this research (not included in this copy of the report).* Again, it must be stressed that this is just one view and reality which should not be regarded as the truth but should be acknowledged as a view that is of influence on the researcher and his research approach and analysis.

2.1. Defining the concept of a policy framework

The final objective of the research is to develop a policy framework that can help MCIT to improve their governing abilities and ultimately their approach to social project development. Before we actually construct such a framework, it would be helpful to examine what actually defines a policy framework and what its elements are. We do so by looking at international literature on the subject and definitions given by several researchers who had to develop policy frameworks for various purposes.

The Ministry for Children and Families of the British Columbia has developed a youth policy framework and defines a policy framework as "a document that provides a rationale and philosophy to guide policy and program development for a given target population. It can be a visionary document written for a broad sector, or it can be the result of a comparative review of several similar programs in order to rationalize, consolidate or integrate them. A policy framework must be consistent with ministry priorities, goals and objectives and must be in keeping with governing legislation. It includes a vision and principles and is generally written for a broad audience" (British Columbia, 2000). They continue by stating that such a framework is used to "develop and communicate a common understanding of the needs of, and approaches to specific target populations. It provides direction, consistency and accountability" (British Columbia, 2000).

MOSAIC (Multilingual Orientation Service Association for Immigrant Communities) defines a policy framework as a structure or tool to guide the development of policy (MOSAIC, 2003). It "provides a rationale and philosophy affecting policy development. As a tool it must be consistent with the priorities, goals and objectives of the host organization and must be in keeping with governing legislation. It includes a vision, outlines the principles and processes to be followed and is generally written for a broad audience" (MOSAIC, 2003).

Jacobson sees a framework as a collection of "different policies, tools and controls involved in policy development" (Jacobson, 2005). It draws on the core values of the organisation for which it is developed. He completes the above definitions by outlining the relation with governance and that governance processes "are an important part of your framework: they decide who initiates new policies, who reviews them, who signs off on them and the timetable for adoption" (Jacobson, 2005).

These are only a few definitions of a policy framework and its function. There are many other definitions in international literature; however they seem to approach the definition in a similar manner. When we look at the above definitions, we can see many similarities between them. First of all, all three definitions seem to underline the fact that a policy framework provides a way of thinking that ultimately guides the development of policy and programs. They also have in common that a policy framework should meet the needs of the organisation that it is designed for; it should be consistent with the core values of the organisation and its objectives while complying with legislation. The definitions also indicate that a policy framework specifically targets populations and provides a structure of direction, consistency and accountability. This structure can also be interpreted as good governance which provides a clear outline on who is responsible for initiating, reviewing and approving policies.

In summary we can state that current literature defines a policy framework as a rationale that guides the development of policy and:

- Takes into account objectives, priorities and core values;
- Complies with governing legislation;
- Provides direction, consistency and accountability;
- Helps understand the needs of specific populations and communicate these to a broad audience.

2.2. Disconnect of ICTs

One can just envisage the meetings in development institutions:

— *Boss*: "OK chaps, we need to apply ICTs in development. Where shall we put the computers?"

— *Underling no.1*: "Well, sir, how about in some high-tech firms in the city that could use them to create jobs and improve exports?"

— *Boss*: "You idiot, that's not what poverty alleviation and social development are all about. Get out of my sight."

— *Underling no.2*: "I know, sir, how about putting them in a small village where there's no electricity, most people are illiterate, and everyone is really poor."

— *Boss*: "Brilliant suggestion; here's $100,000; go and do it."

(Heeks, 2005)

While ICT's are considered to be a catalyst for development, the digital divide still persists and opportunities to sustain economic development, especially for the poor, are not fully deployed. Apparently there's a disconnect present that prohibits the full use of the potential of the information age to leapfrog barriers to development and fast track social and economic inclusion and poverty reduction (Gwynne, 2006). Gwynne states that "popular understanding of ICT4D still tends to focus on "technology" and neglects the "information" and "communication" components. Inefficient barriers remain in policy and regulatory environments to frustrate the rollout of proven ICT4D pilot projects" (2006). Research has shown (Kitner, 2006) that it is not sufficient to solely provide connectivity, nor is it enough to have affordable technology. The focus lies, especially within disadvantaged communities, on sustaining and self-perpetuating the technology for social and economic development to be reaped by the members of a community. Kitner identifies that "such embedding is more easily attained when those who design the project see the focal community for the assets it already has, not only for what it lacks" (2006).

As a result of the problems mentioned above, members of such communities don't see how their lives tie into the projects that are being implemented by several nongovernmental organizations (NGOs). The services that are being designed and that have evolved on the internet are often suited for those in the economic elite, the ones that are more likely to participate in the global economy. Therefore, Kitner proposes that ICT4D must take into account "existing activities – particularly economic activities and the related human capital – of these communities" (2006). One can pose the question whether it is reasonable to ask a fisherman to walk 10 kilometres everyday back and forth to the nearest telecenter to participate in his ICT education, while his daily work-activities (that provide him with his basic needs) are neglected in the process. Do people need to surrender the security mechanisms they already have for the promise of more money in the future? Next to the economic functions that put food on the table, social relationships and networks comprise human capital that is just as important for the well-being of the community member as money-making.

Vaughan states that current policy often uses ICT4D on national issues such as "creating the facilitating environment (regulation and privatization, human resources, infrastructure deployment), reducing transaction costs and increasing transparency, efficiency and access to services through e-commerce and e-government" (2006). She then argues that "this top-down approach dominates the literature in spite of increasing pressure in global forums to deliver universal access and full inclusion (stated during WSIS 2003) and to specifically target the poor as distinct from broad development goals or general economic growth (stated during DAC 2005)" (2006).

Furthermore, Vaughan argues that "at a micro level the result is an ongoing level of exclusion from participation in the digital economy or information society or at best a lesser participation" (2006). Even when national policies recognize the need for an alternative approach, the entire effort is heavily constrained by available (often human) resources in the implementation phase of the strategy. Vaughan states that "priority is then given to the macro enabling strategies and heavy reliance is placed on partners and donors" (2006) for the micro level initiatives. Furthermore, Gwynne added that "while resource constraints are a major factor, as much as or more damage is done to ICT4D prospects by inadequate understanding of their potential and by poor governance" (2006).

Heeks considers jumping on the bandwagon of hypes such as rural telecentres, telemedicine for remote communities and E-government for the masses as a rusting tractor of the 21st century. "Most of these projects never properly work, and for those that might just get off the ground, go back two years later, and it's all crumbled to dust. Yes, there might be exceptions but they are just that – exceptions" (2005). Heeks provides what he calls a classical example: Gyandoot is an initiative encompassing computer kiosks in rural India. The project has been rewarded with awards from the Stockholm Challenge and the Computer Society of India. However in 2002, the kiosks were found abandoned or closed with few signs of developmental benefits (2005). The way of thinking behind these projects can be categorized as 'supply thinking' wherein the fundamental question of how the disadvantaged individuals live and what would support their work activities is never asked (de Jong, 2008).

To summarize, the problems discussed regarding ICT4D policy and project development are:

- Resource constraints in combination with poor governance;
- Hypes (such as telecentres) are being deployed and implemented on a copy-paste manner, thus neglecting the real needs and wishes of developing communities'
- Inadequate understanding of economic activities and related human capital present in developing communities and an inability to foster these to increase development opportunities;
- Members of developing communities don't see how the services and projects implemented complement their way of working and their daily activities, resulting in little or no response.

Therefore, the research conducted will be in effort of alleviating these problems to an extent and with a final objective of constructing a policy framework that takes ICT4D as an integral pillar and stimulates 'good governance' practices. As Rahim accurately states: "An ideal ICT4D policy framework is inclusive in orientation (i.e., targeting all strata of society, particularly the marginalized) and incorporates a thorough understanding of people's aspirations and needs. It emphasizes the use of appropriate technologies in addressing development challenges, leverages on both traditional and new media as development platforms, and it has in place a system for measuring progress and impact" (2004).

Knowledge Gaps

The research is somewhat of a challenging nature because of its novelty. Even though there are many calls for alternative frameworks that incorporate both national as well as communal objectives and approach ICT4D holistically, it seems that such a framework has yet to be developed. Therefore, it is important to acknowledge possible problem areas that one could run into when executing the research:

- The methodology of GT has two sides to it. First, the theory makes it possible for the researcher to work with various forms of information from different sources. The researcher is therefore not specifically dependent on a certain piece of information but can work with the information he has.

However, the downside of this way of working is that there are many degrees of freedom making the information less controllable. Furthermore, respondents might consider telling the researcher what he wants to hear or give 'glamorized' information so that the real issue at hand is uncovered and does not depict any incompetence or neglect on the side of the respondent.

2.3. The importance of 'Good Governance'

When we deal with social and human development, we often see that a first responsibility lies with governmental entities who work together with experts in the field of social development to initiate and guide social practices. A first requisite for social development would therefore be the ability to govern in a correct manner, e.g. '*good governance'*.

It is to be expected that most factors and necessities for an effective approach to social project development will either directly or indirectly be based on government performance or good governance. There are many discussions on the topic; questions are posed on what actually defines good governance and similarly what bad governance is. When looking at international literature on the topic, we often see a recurring and often cited definition of what 'good governance' is and which main elements are of importance. This definition has been constructed by the United Nations and entails nine main elements.

Before we begin exploring what actually good governance entails, we must first start at the beginning and try and define the term governance. Sadler (2004) states that "governance in its broadest sense refers to the coordination of social systems and institutions". The United Nations Office of the High Commissioner for Human Rights (UNOHCHR) explains that there are many criteria used to define the term, however one common element would be "the degree to which it delivers on the promise of human rights: civil, cultural, economic, political and social rights" (UNOHCHR, 21/12/08). Abdellatif (2003) explains that governance deals with processes. "Common definitions describe governance as a process by which power is exercised without explicitly stating the ends being sought" (Abdellatif, 2003).

The UNDP has developed an extensive definition of governance: "the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences" (UNDP, 1997). The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) complements this definition by stating that governance "assures that corruption is minimized, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision-making. It is also responsive to the present and future needs of society" (UNESCAP, 21/12/08) .

Taking these definitions into account, we see a common basis founded on the following similarities:

- Dealing with (social) institutions, mechanisms and processes
- Delivering on human rights and necessities

- Taking into account the interests of all citizens when making decisions

Now that we have an idea on what governance entails, we need to take a next step and examine what defines good governance and which specific elements stimulate good governance practices. Here, we again take into account various views on the definition; however we see a recurrent and often cited definition in international literature. This definition of good governance (consisting of nine core elements) has been constructed by the UNDP. This UN organisation has done extensive research on the subject and came up with several core elements of 'good governance' (1997):

1. *Participation* - All men and women should have a voice in decision-making, either directly or through legitimate intermediate institutions that represent their interests. Such broad participation is built on freedom of association and speech, as well as capacities to participate constructively.
2. *Rule of law* - Legal frameworks should be fair and enforced impartially, particularly the laws on human rights.
3. *Transparency* - Transparency is built on the free flow of information. Processes, institutions and information are directly accessible to those concerned with them, and enough information is provided to understand and monitor them.
4. *Responsiveness* - Institutions and processes try to serve all stakeholders.
5. *Consensus orientation* - Good governance mediates differing interests to reach a broad consensus on what is in the best interests of the group and, where possible, on policies and procedures.
6. *Equity* - All men and women have opportunities to improve or maintain their well-being.
7. *Effectiveness and efficiency* - Processes and institutions produce results that meet needs while making the best use of resources.
8. *Accountability* - Decision-makers in government, the private sector and civil society organizations are accountable to the public, as well as to institutional stakeholders. This accountability differs depending on the organization and whether the decision is internal or external to an organization.
9. *Strategic vision* - Leaders and the public have a broad and long-term perspective on good governance and human development, along with a sense of what is needed for such development. There is also an understanding of the historical, cultural and social complexities in which that perspective is grounded.

(for a detailed description of the nine elements, please refer to the 'Governance for Sustainable Human Development' report, UNDP, 1997)
Many UN organisations have similarly conducted research on 'good governance' . For instance, the UNOHCHR has also defined several key elements to good governance: transparency, responsibility, accountability, participation and responsiveness (to the needs of the people) (UNOHCHR, 21/12/08). The objective according to the commission would be to "ensure that the views of minorities are taken into account, heard and incorporated in the decision-making process. It also needs to be responsive to both the present and future needs of society and aims to minimize corruption" (UNOHCHR, 21/12/08).

The UNDP in turn defines good governance as “participatory, transparent and accountable, effective and equitable, and it promotes the rule of law. It ensures that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources” (UNDP, 1997).

Sadler continues the discussion by explaining that it is therefore necessary to “focus on the informal and formal structures of the organizations, governments etc. involved in pursuing economic self-sufficiency, the construction of partnerships, and the process at which decisions are made and implemented. Good governance provides a framework in which to review, and endeavour to strengthen, the interactions and the organizational structures of all involved” (Sadler, 2004) . The UNDP (1997) agrees with this stand and encompasses not just the state in its definition of good governance, but includes private sector and civil society as well. All three parties are seen as essential to ensure sustainable human and social development (UNDP, 1997).

Patton has identified three common themes that can be found in most definitions of good governance (Patton, 2008):

1. Good governance involves the use of legitimate power and authority;
2. Good governance must be conducted with the administrative values of participation, transparency, responsiveness, equity, effectiveness, efficiency, and strategic vision;
3. Good governance must be responsive to the governed through substantive and procedural accountability measures.

When we move into the discussion on whether good governance provides for accountability and transparency, Patton informs that accountability can be accomplished in several ways: “compliance with laws; regulations and public policy; clear designation of the chain of responsibility leading ultimately to an elected official; and a clearly defined code of ethics for the executive and legislative branch including a neutral body to review ethical violations” (Patton, 2008).

Transparency involves the whole manner in which a governmental body operates. Patton finds that it should be “the rule for decision making at all levels and in all participating organizations, the methods and resources used in governing, and an open evaluation of the outcomes of public policy in agencies and programs. The governing network should use valid performance measures to demonstrate to the governed their level of efficiency and effectiveness as they evaluate policies and Programs” (Patton, 2008).

There are many definitions to both the terms ‘governance’ and ‘good governance’, but we seem to distinguish a similar basis and common elements for all of them. The definitions of the UNDP (1997) are often cited in current literature and even when authors try and define the terms individually, they seem to end up on the same note and incorporating the same elements as the UNDP uses. Apart from this finding, we need to consider a different note that is often discussed in international literature. Having ‘good governance’ can be regarded as an ideal that is very difficult to achieve in its entirety. Even in the most cultivated and developed countries, we see that mistakes are made in the governing processes. However, even though good governance in its totality seems difficult to achieve, governments and societies must take actions and work towards this ideal to ensure sustainable social development.

2.4. Problems regarding existing Policy Frameworks

ICTs have evolved into a powerful catalyst for socio-economic development. The general notion is that ICTs have a positive impact on several development indicators such as health, education and gender empowerment (UNDP, 19/09/07). However, a one-sided approach is often used to look at the problems in developing communities and to implement solutions and actions. Technology, in the form of infrastructure, connectivity, networks and equipment, is sometimes seen as an objective in itself, instead of as a means to achieve or accomplish something else such as facilitating a process, an action or the making of a decision. As a result, the 'I' and 'C' components that encompass humans are often neglected. Yusoff discusses the trade-off between the different components and states that "while technology plays an integral role in ICT4D, it should be understood as an *enabler* and not a panacea in itself as the human factor involving the participation of people and their motivation to adopt ICT-enabled development is still fundamental" (2003). Yusoff sees the ICT tripartite as a dynamic and continuous flow of information, communications and technology (2003):

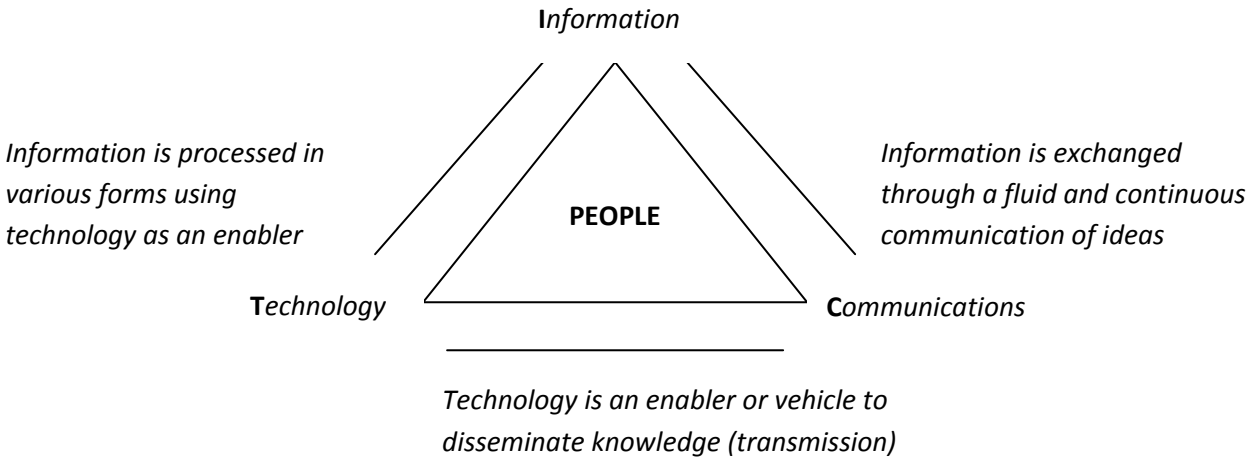

Figure 2.1: Synergistic ICT relationship

The unbalanced use/focus of the three components of the ICT tripartite has displayed itself in a more recent development, namely that content and services designed are often not well accepted by the community members. Therefore, ICT4D needs to take into account existing activities, particularly economic activities employed within communities and the related human capital. Technology must go hand in hand with community daily life and should not be considered as the "change agents" (Kitner, 2006).

2.5. Framework Gaps

One can find in international literature numerous examples of (international) frameworks that either cause the problem of ineffective social development or try and alleviate it. Two main frameworks that are often considered as good examples of how to tackle the problem of an unbalanced focus for social development are the community centred ICT4D policy framework of Vaughan (2006) and the

DOI framework of the UNDP (2001). While both definitely have certain merits to their approach, issues are still present that could lead to an ineffective approach to social development.

Vaughan schematically summarizes the traditional top-down approach, represented in figure 2.2 (2006). She also gives an indication of a community approach in figure 2.3 (2006), which must work on "the premise that ICT embedded in existing community structures and activities has greater benefits in terms of community development and a larger chance of success than externally designed ICT based or network models" (2006, p.7) that are implemented using a copy-paste model.

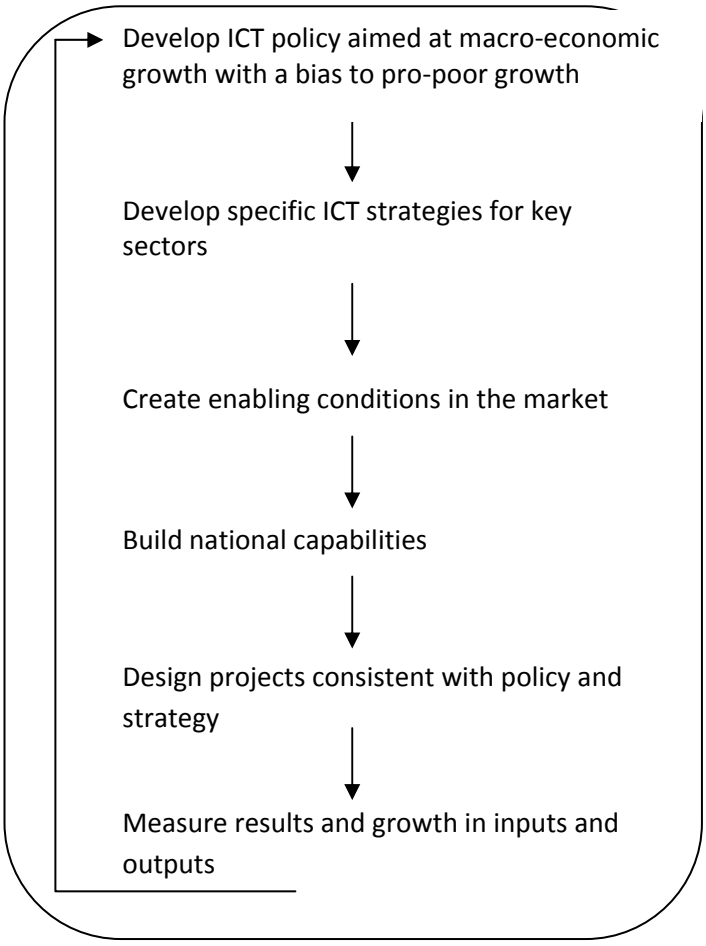

Figure 2.2: Top-down ICT4D policy development framework (Vaughan, D., 2006)

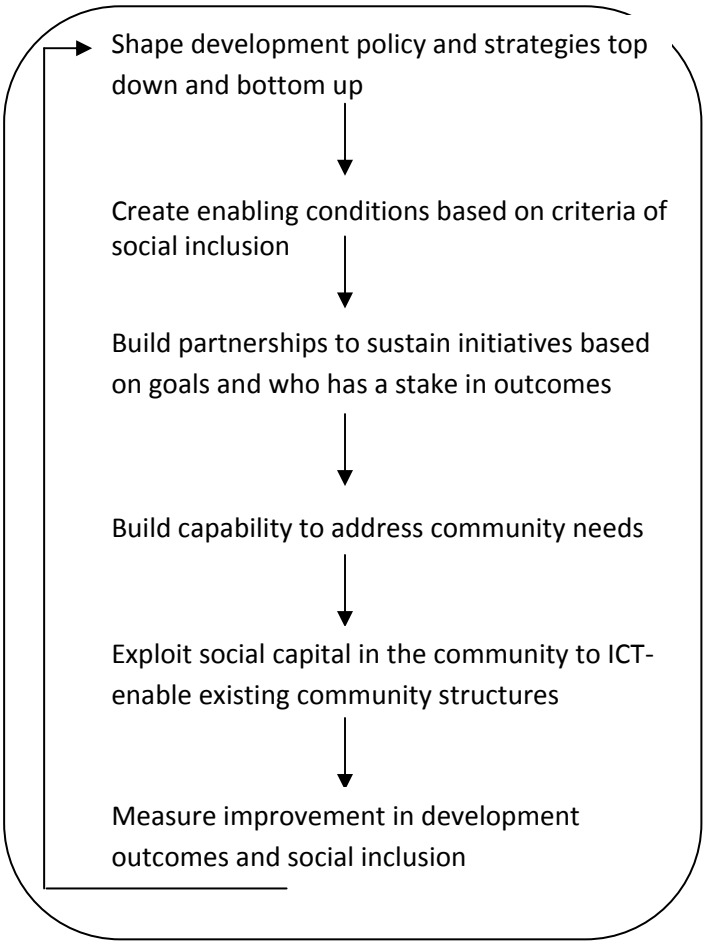

Figure 2.3: Community centred ICT4D policy development framework (Vaughan, D., 2006)

As a result of the first development framework, many development projects often 'See the hole instead of the doughnut'– they see the things that a community does not have, and they often overlook what the community already has, things like informal economies, the social structures, traditional healers, and the wealth of community knowledge (Kitner, 2006). Future design of ICT4D solutions should therefore make use of community strengths and focus less on fixing weaknesses in the community infrastructure. A top-down approach does not effectively support this idea, resulting in the need for a new policy development framework. Vaughan has identified that such a new framework implies three important changes:

1. “At a community level, focus is shifted to specific community needs and aspirations (tailor made solutions) rather than pre-designed formula solutions” (2006);
2. “Investments are rebalanced at both macro and micro levels based on broad socio-economical development outcomes that can be achieved separately from the purely economic inputs and outputs” (2006);
3. “Structured funding and partnerships are established based on who specifically has an interest in the outcomes targeted” (2006) (‘business as usual’).

In summary Vaughan states that “if the underlying drivers or issues which ICT4D policy aims to address are defined at a macro-level (e.g. economic growth, the drive to e-development in both the private and public sector, infrastructure and access) then policy solutions will mainly focus on enabling infrastructure and capabilities at a national level” (2006). She then argues that “if on the other hand the drivers or issues of ICT4D are defined from a community perspective, then the process will engage those with an interest in development outcomes at a community level” (2006). The challenge according to Vaughan and main knowledge gap within this research is “how to move away from an ‘either or’ choice to a more balanced model” (2006) and to incorporate the advantages of both approaches in order to create development opportunities on both a national and community level.

Vaughan’s framework along with similar frameworks found in existing literature are stated on a very high level, while a precise and structured framework that supports good governance practices and the development of projects and activities to benefit both national and community objectives is necessary. Furthermore, the policy frameworks of Vaughan (2006) are either characterized by a top-down or a community approach. Although she expresses the need for a more balanced model, a policy framework that encompasses both approaches in an integrative way seemed not to be available in current literature.

A second example of a well known framework is the DOI Framework of the UNDP (2001). The Digital Opportunity Initiative (DOI) framework (see figure 2.4) consists of 5 main themes that are interrelated. “Maximum development benefit is achieved when interrelated components are pursued in conjunction with one another so that the interplay among them becomes catalytic” (UNDP, 2001). Even though the framework seems to encompass many of the important elements necessary to create development opportunities, some critique remains that stems from recurring problems when trying to formulate an overall approach to social development. As mentioned before within this chapter, the danger of formulating such an overall approach is that it often limits itself to a higher aggregate level and does not actually trickle down to concrete components that can be addressed to inspire good governance practices and to actually create real impact within the disadvantaged communities. We see that current frameworks do not explicitly mention the existing economic activities within the communities and how technology can strengthen these activities in terms of relevant technology, tailored applications and human capacity. Furthermore, a general picture does not leave much room for exact prioritization of specific actions or components. It is important to analyse what components are prerequisites to others and what the exact relations and dependencies are within an overall structure of components. When looking specifically at the DOI framework, which can be characterized as an overall framework to social development, we can again see these recurring problems and the following questions remain relevant:

- Regarding the notion that all factors are interconnected: is it sensible to approach enterprise development in the same manner and with the same priority as social development and inclusion?

- How exactly are the themes interconnected, what exactly feeds into what? Would for example policy feed into all other four or should policy only be designed to provide enterprise development?

- There is no clear prioritization structure. It is unclear which factors have priority over others and which factors have to be accomplished first so that other factors can become reality (not taking into account the interdependency).

- Enterprise is mentioned explicitly; however social development has not been given the same priority. It has been tied into policy development, which leaves the question whether it should be a standalone objective with its own criteria and properties?

- Technology is not explicitly mentioned, what type of technology is suitable for what type of development?

- Capacity currently does not mention anything on human capacity in the form of individuals with relevant backgrounds in social development and adequate training.

Both frameworks therefore do not live up to the requirements posed by social development. Consequently, there exists a clear need for an a new framework that complements these two important ones, taking into account the merits of both Vaughan's and the UNDP framework, while going a step further by considering national and community objectives at all levels and phases of project execution. A generic framework that supports different situations and countries would perhaps not be achievable or even desirable since it could take attention away from the concrete and specific problems that exist within a certain country. Therefore, the ambition within this research is to start out with Egypt as a case study (see paragraph 2.6) and to construct a framework that specifically supports Egypt's needs. In time, the possibility exists of localising the framework to needs within other countries by looking at similar situations in developing countries while taking country-specific differences and contexts in perspective.



Figure 2.4: DOI framework

3. Analysis and Methodologies

"In the last analysis, our only freedom is the freedom to discipline ourselves." (Bernard Baruch)

The entire research is conducted using GT as a main methodology. GT can have many goals, one of them being the formulation of hypotheses based on conceptual ideas. Others will approach these hypotheses by comparing them to conceptualized data on different levels of abstraction. Another goal would be to extract the participant's main concern and how they approach these concerns.

Glaser and Strauss (1967) explain that GT does not aim to surface the 'truth' but to conceptualize what takes place by using empirical data. In a way, it is exactly the opposite of many forms of academic research in which the researchers has predefined hypotheses and conducts the research to examine them. Within GT, it is prohibited to have these predefined hypotheses; instead they are formulated after conducting the research to fit the data. Therefore, GT is more an inductive approach, in which theory is inductively discovered in data that has been systematically analysed.

GT does not lend itself for descriptive purposes but generates concepts and theories to explain people's actions and decisions. Descriptions are only used to further explain the concepts found. GT does not result in the presentation of facts or figures, instead it gives an "integrated set of conceptual hypotheses developed from empirical data" (Glaser, 1998).

Within this research, there are four main stages that all lead up to discovering the hypotheses and grounding the theory. First, data must be obtained from various sources. Further data was obtained in the second stage of the research, which consisted of interviewing relevant participants. Interview transcripts were collected and these were used in the third phase of the research: coding the data. Eventually, the fourth stage lead to the construction of a theory formed from hypotheses that in turn were extracted from previously defined theoretical codes.

This chapter will describe the approaches used within the analysis of all four stages. The guidelines were abstracted from the following publication: *Constructing Grounded Theory – A practical guide through qualitative analysis, Charmaz, K (2006).*

3.1. Obtaining the Data

To obtain the data in a qualitative manner in line with the explorative method of GT, it is important to establish certain guidelines that can help the researcher during the obtainment process. These guidelines were extracted from the book '*Constructing Grounded Theory – A practical guide through qualitative analysis'* by Charmaz (2006). The method of obtaining data is surveys, more specifically interviews with representatives from the social development arena.

Sensitizing Concepts

It is important with qualitative research to follow leads that emerge. Blumer's (1969) notion of sensitizing concepts is useful since they give the researcher initial ideas to pursue and sensitize the researcher to ask particular kinds of questions about the topic at hand. Grounded theorists often begin their studies with certain guiding empirical interests to study and, consistent with Blumer,

general concepts that give a loose frame to these interests. This is however different from the approach set out by Strauss and Corbin (1990), who use specific sensitizing themes that directly guide the researcher to explore certain predefined themes. This is not the method used within this research; however it is preferable to have a general notion on the subject and the direction of the research and its findings.

Evaluation of the data obtained (richness)

It is important to ask yourself what kind of data classifies as rich and sufficient. The following questions are of importance to evaluate the data:

- Have I collected enough background data about persons, processes, and settings to have ready recall and to understand and portray the full range of contexts of the study?
- Have I gained detailed descriptions of a range of participants' views and actions?
- Do the data reveal what lies beneath the surface?
- Are the data sufficient to reveal changes over time?
- Have I gained multiple views of the participants' range of actions?
- Have I gathered data that enable me to develop analytical categories?
- What kinds of comparisons can I make between data? How do these comparisons generate and inform my ideas?

Constructing data

There are certain ways within grounded theory that the researcher can follow to construct his data:

- Attending to actions and processes as well as words
- Delineating the context, scenes, and situations of actions carefully
- Recording who did what, when it occurred, why it happened (if you can ascertain the reasons), and how it occurred
- Identifying the conditions under which specific actions, intentions, and processes emerge or are muted
- Looking for ways to interpret these data
- Focusing on specific words and phrases to which participants seem to attribute particular meaning
- Finding taken-for-granted and hidden assumptions of various participants; showing how they are revealed through and affect actions

3.2. The Interview Process

Next to the official documentation available to the public on the different ICT4D initiatives, it is important to also obtain complementary info on the experiences of the project leaders. Since we are aiming to construct a policy framework that provides MCIT with a structured governance approach to social project development, it is important to obtain information that gives insight into possible barriers, needs, communication patterns and other important aspects of social project development.

Yin (2004) identifies different types of interviewing. The first form is an 'open-end' interview in which the interviewer asks the respondents questions on both the facts of a certain subject and the opinions of the respondents on specific events. This form is often broadly oriented and informs the interviewer on specific events and affairs.

A second form encompasses more structured questions, mostly in the form of an inquiry. This type of interview is more suitable when one for example is researching an institution and all its employees need to be interviewed. A third and last form are the 'directed' interviews, in which a respondent is interviewed during a short period of time, for example an hour. This type of interview can have an open-end and the interview is conducted in a conversational manner. The interview is inclined to follow a particular set of questions, directed from a case study investigation. This form makes it possible for the interviewer to obtain information that is of relevance to the research and by which specific information regarding particular developments can be gathered.

Considering the above mentioned types, the *third form* of interviewing is most appropriate for the research at hand. The first type puts the emphasis on a more orienting stage, which is not in line with the stage of this research. This type is more suitable for preliminary research, while the current interview stage is focusing on certain events, projects and actors. The second type concentrates on the use of a large group of respondents who are all equally important for the completeness of the research. Since the scope of this research is limited to certain actors within the development field in Egypt (in which a representative of an adequate level is sufficient for information obtainment) and uses a small but focused dataset, the second type is again not appropriate for this research and its objectives. The third form lays the emphasis on an advanced stage of research during which specific and directed information is obtained. This description is in line with the stage of the research, making this type of interviewing most suitable.

Interviews have both strengths and weaknesses that must be considered by the interviewer at all times to avoid common pitfalls of interviewing. These strengths and weaknesses are briefly presented in table 3.1 (Yin, 2004):

Table 3.1: Interview strengths and weaknesses

Interview	
Strengths	**Weaknesses**
- Directed – focuses on the subject of the research and its case study - Transparent – indicates observed causal relations	- Possibility of bias due to wrongly established questions - Possibility of bias in the reactions of respondents - Inaccuracies due to poor recollection (of events, details) - Reflexive character – the respondent tells the interviewer whatever he wants to hear

Furthermore, it is important for the interviewer to keep a few general aspects in mind during the interviewing stage (Yin, 2004):

- *The interviewer must be able to ask relevant questions and be aware of the information he considers to be necessary for a correct analysis.*

  Therefore, it is important to determine exactly what kind of information is needed to conduct the research while still keeping in mind the GT principle that the data should guide the researcher. The interviewer must therefore determine the degrees of freedom that he can allow while keeping the obtainment of relevant data as a priority.

- *The interviewer must be able to listen to the interviewee.*

  This point is especially important when considering the basis of GT that entails that the information actually leads the researcher and his analysis.

- *The interviewer must be flexible and adaptive, so that new situations and concepts are seen as possibilities instead of threats.*

  Again, this is important when considering that all information that the interviewer obtains should according to GT be taken into account and could form a new concept. The researcher does not know what types of information will be important during the analysis phase. Therefore, it is important to have an open attitude towards new information since it could prove to be valuable in a later stage.

- *The interviewer must exert a good grip on the research subjects and information obtained.*

  This grip will provide the researcher with the possibility of breaking down all relevant information into manageable pieces. Since the main input of the research here is the information obtained from interviews, it is important to have a good overview of all the data and be able to process it in such a way that it is possible to take the data to higher levels of aggregation in order to construct the overall framework.

- *The interviewer must be sensitive and open towards conflicting information.*

  It is important that the researcher is able to take into account both complementary and conflicting information and work this into a theory that encompasses an overall idea and framework.

Now that the interview form has been determined, the strengths and weaknesses of interviewing have been identified along with the conditions that an interviewer has to comply with; it was possible to construct two interview protocols that were applied to the relevant actors. A distinction in protocols is necessary since the researcher does not know what kind of information he will obtain, what the level of detail will be and which main themes will surface. When the interview process is in a more advanced stage, it is important to readjust the protocol so that relevant information is obtained that can be applied and compared to the earlier obtained information. Therefore, a more detailed protocol is appropriate during this phase.

General Interview Protocol

The first, more general interview protocol consists of three main elements that aim to carry the research objective and extract relevant and rich data. The components, consisting of *general project approach*, *specific project approach* and *cooperation*, have been chosen to ensure that enough

information is extracted to answer the research questions and ultimately support the construction of a new framework. This framework must take into account the more general way of working (governance), the specific functioning within a project and the essential cooperation that is needed to facilitate and execute the projects so that it can build on the strengths identified within these areas and turn the weaknesses into new opportunities.

First, it's important to ask certain questions on project approach in general. One could consider questions on subjects such as the selection criteria for projects, motives behind projects and the coherence of the projects with a general strategy and objective. This section is important so that a broad perspective on the vision of the different actors and what they consider specifically relevant projects within Egypt can be surfaced (what is actually necessary and what projects can support these needs). Furthermore, it provides the researcher with information on general manners of project development and project execution and their pros and cons.

The second component of the interview protocol consists of project specific questions. Here the researcher goes into more depth to obtain information about a specific project initiated and implemented by the interviewee. This section has been subdivided into questions on the nature of the project (objectives, target audience etc), main obstacles experienced during execution and the findings and evaluations of the project. These three subcomponents are important to break the information regarding a specific project (both the information obtained from the interview as from formal project documentation) into manageable parts. These three subcomponents cover all stages of project development, execution and evaluation and are in line with the ambition of the research to identify possible problems and solutions/opportunities for all project stages.

The third and last component concentrated on questions regarding the cooperation of the actor with other partners. Within the field of social development, it is important to acknowledge that one actor cannot 'change the world'. Project success relies on effective cooperation between different partners, all contributing to the shared objective of social development. Therefore, it is important to consider questions on the effectiveness of cooperation with other partners in terms of communication, responsibilities, project sustainability etc.

Specific – MCIT Interview Protocol
This interview deals with more specific questions that are targeted at MCIT actors. The last four interviews have been conducted with these actors to ensure that the preceding information obtained from the first three interviews are comparable to specific MCIT obtained information.

The interview protocol consists of several components that are also housed in the more generic protocol. The difference here is that within these components, the questions are directly addressed to MCIT actors on MCIT subjects taking into account earlier reviewed formal documentation. The questions are considered to be most relevant to the issues that MCIT is facing today with regard to social project development and governance performance. The components range from *objectives* to *political support*.

3.3. Coding the Data

Now that all information has been collected and obtained from different stakeholders, the research moves into a next stage: analysis. During this stage, all information is carefully analyzed and coded according to GT rules on coding. The way of coding and the specific codes show how the researcher selects, separates and sorts his data in order to analyze them in an analytic manner.

Charmaz describes coding as "the pivotal link between collecting data and developing an emergent theory to explain these data (2006). Grounded theory coding does not apply preconceived categories or codes to the data (as in the case of quantitative logic) but creates codes by defining what one sees in the data" (Charmaz, 2006).

Coding is done in multiple phases that all lead to the construction of a core theory and hypotheses. Table 3.2 gives an overview of the different coding phases that are relevant according to the different research stages:

Table 3.2: Coding phases

Research Stage	Coding Phase
Preliminary stage – Reading different materials and determining stakeholders	1. Initial (open) Coding – Constructing a preliminary structure of codes, sub-categories and categories
Data Collection stage – Surveying stakeholders	1. Initial (open) coding continued – refining codes, sub-categories and categories 2. Identifying causal relationships and constantly comparing data to data
Data Analysis stage – Reviewing and comparing all data	1. Focused (selective) coding – Determining core categories 2. Reviewing all codes according to core categories
Theory construction	1. Theoretical coding - Identifying core hypotheses 2. Theoretical integration - Emergence of core theory
Presentation	1. Presenting core theory

Preliminary Stage

During this stage of the research, the researcher mainly collects and reads up on all materials related to the main stakeholder (MCIT) and its development projects. The researcher has an open stand towards all data and, according to the information, determines the relevant stakeholders in the field of development as possible interviewees. He does so by identifying recurring actors within the materials and by looking at the national actor arena and determining how these recurring actors are representatives within the arena.

While reading the information obtained, the researcher starts to determine certain common elements in the data and will document these and other emerging concepts by using side-notations.

Initial or open coding is then practiced to construct a preliminary structure of codes that all relate to a more general category (or subcategory when one category does not cover the information richness of a group of common/relating codes). The codes closely stick to the data and are formulated as actions (e.g. *being happy* instead of *be happy*).

Different forms of initial coding exist: word-by-word, line-by-line and incident-by-incident coding. The first two forms are referred to as microanalysis of the data (Straus and Corbin, 1998). Moghaddam (2006) specifies two main disadvantages of microanalysis:

1. Time consuming, especially when the data is obtained through interviews.

The transcriptions of these interviews usually contain a massive amount of data in each and every word or line that then must be analyzed to obtain information that is of relevance to the research topic (Moghaddam, 2006).

2. Possibility of confusion at times.

When dividing all data in words or lines, the possibility exists that the actual analysis becomes lost within the details of the data (Moghaddam, 2006).

It is therefore more relevant to identify key points (rather than key words or lines) and to allow for concepts to emerge. The selection of points is in line with qualitative coding analysis and protects against data overload (Allan, 2003). The research will therefore follow the *incident-by-incident* form of open coding. This methodology is a close cousin of line-by-line coding but compares different incidents within the data. This allows the researcher to identify properties of the emerging concepts and discover patterns and contrasts. Since the research here does not focus on specific details but tries to identify emerging themes and concepts, this methodology is most appropriate.

Data Collection Stage

During this stage, the interviews are conducted with the determined stakeholders. In this case, seven interviews have been conducted with actors from all relevant arenas of social development. The interviews are conducted using the interview protocol and notes are taken during the interview. These notes are then translated into interview transcripts that are analyzed and coded using initial incident-by-incident coding. The previous formulated side-notes and codes (during the preliminary stage) are taken into account and where necessary redefined in accordance to newly obtained data.

An important step here is to constantly compare the data in order to find similarities, differences and causal relations. These are necessary to categorize the numerous codes to more general categories (or sub-categories when needed). It is important to recognize that what the researcher sees in the data is partly dependant on his prior perspective. It is important to regard this personal perspective as one view among many others (Charmaz, 2006).

Data Analysis Stage

This stage basically consists of further comparison and analysis of all data. Here, the coding takes a more focused approach, using the most frequent initial codes and the causal relations to construct core categories. The core categories explain the behaviour, perceptions and actions of the

participants in resolving their main concern. Focused coding delimits the study, assisting the researcher to go through the data swiftly. The core categories are more directed, selective and conceptual than the initial codes. This is in line with the methods of GT (Glaser, 1998) since GT is not concerned with the exact accuracy and detail of the data (as is the case in descriptive data) but underlines the need for generating concepts that are abstract of time, place and people.

During this stage, the researcher takes decisions on what codes "make the most analytical sense to categorize your data incisively and completely" (Charmaz, 2006). The researcher eventually moves on to a higher aggregate level, stepping away from concepts with little importance to the core categories. If necessary, new data can now be analyzed having the core categories in mind.

Next to initial and focused coding, Straus and Corbin (1990) introduce a third type of coding: axial coding, which is a method to relate categories to subcategories. This type of coding is not considered during the research, since it is a Strauss technique while the research solely utilizes Glaser's method of GT. Furthermore, Glaser (1992) argues that theoretical codes preclude a need for axial coding because they 'weave the fractured story back together' (Glaser, 1978).

The entire coding process has been illustrated in figure 3.1 wherein the process starts with formulating initial codes and ends up with a core (grounded) theory that summarizes all of the information analyzed.

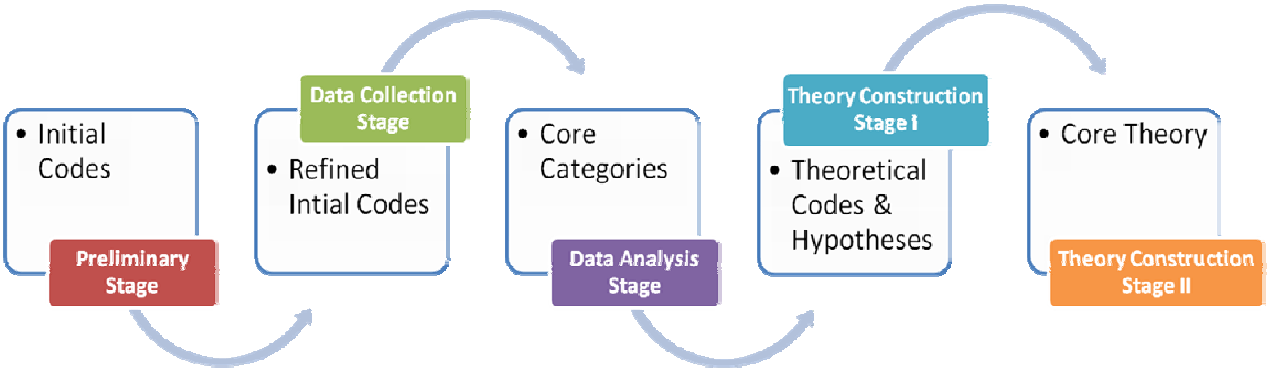

Figure 3.1: Coding process

3.4. Extracting the Theory

During this stage, the coding focuses on emerging theories with eventually the identification of a core theme and the constructing of core hypotheses. This level of coding is more sophisticated, in which the researchers uses the core categories defined during focused coding and specifies possible relations between them. The theoretical codes conceptualize "how the substantive codes may relate to each other as hypothesis to be integrated into a theory" (Glaser, 1978).

Theoretical coding families consist of predetermined codes that can be applied to the previously defined core categories. Examples of such families are 'degree', 'dimension', 'culture' and 'interactive'. These coding families should only be used when they fit your data. The research did not

use any of the coding families because of certain disadvantages. An example would be over-reliance on the coding family which eventually leads scholars to impute conscious intentions when participants may not hold them (Glaser, 1978). Furthermore, if coding proceeds correctly, you will eventually recognize natural theoretical coding families within your own codes.

Relations between the theoretical codes are determined and translated into hypotheses that explain the main concern of the participants. A last step would be to construct the core theory by looking at the different hypotheses, their relations and how they relate to the subject of social development. The theoretical codes and hypotheses along with the core theory are presented in the following chapter 4: grounding the theory. It is important to acknowledge that the theoretical codes are not objective criteria and should only be used to help clarify the analysis. The theoretical codes must not be forced upon the data, but should emerge during the comparative process of GT (Wikipedia, 03/09/2008).

Presentation

At this final stage, the found hypotheses and core theory are presented to the main beneficiary of the research, MCIT, bringing together all concepts and integrating them into categories that have explanatory power within the context of the research (Moghaddam, 2006). Unlike with quantitative research, where the researcher can justify his evidence and findings by sharing for example a copy of the interview protocol and statistical analysis, qualitative research does not allow providing such evidence in a manner that is readily accessible by the reader. Therefore, the analysis process should be presented in such a way that is provides an overall picture of the selective work. More specifically, the researcher should try and chart the process as it evolves, to explain the emergence of the theory and to share juncture and breakthrough in terms of theoretical insights (Goulding, 1999).

4. Grounding the Theory

"It is the theory that decides what can be observed." (Albert Einstein)

The entire process within the methodology of grounded theory is an *overall, emergent* process in which you start out with data and slowly move into a more selective approach where you try and make sense of the data. One of the main benefits of GT is that data is systematically analysed, taking into account all previous steps repetitively to eventually construct a grounded theory that covers an overall view on the problem situation. First of all, the conceptualisation phase allowed the forming of *a view* on reality and how the study could learn from current practices and their opportunities and problems. Obtaining data was the basis for the research and provided a small but focused set of 7 interview transcripts. Formal project documentation was not available on a large scale and was taken into consideration as complementary information. The transcripts proved to be most useful and possessed enough content and richness to feed the analysis.

An important process in the coding process that allows the researcher to make sense of all data is the categorization of the initial codes according to similarities and differences and the recognition of emerging themes. The researcher first starts out with the analysis of the transcripts, looking at incidents and formulating initial codes. A second step would be to group these codes under bigger core categories by looking at the similarities and cohesiveness of the codes. These core categories are then categorized according to their relevance (number of initial codes) and the number of relations they have with other categories. These are quantitative criteria; however they translate into a qualitative reasoning in the following manner. The number of codes under a core category depicts the number of times the subject was mentioned within the interviews and thus reflects on the importance of the category within the minds of the experts. The number of relations explains the influence and importance of a category on other categories.

The categorization of the core categories leads to the formulation of theoretical codes, which are then analysed thoroughly using theoretical integration to extract the information within the code, its consequence on the main subject and the hypothesis belonging to the code. Charmaz (2006) explains that "grounded theory coding generates the bones of your analysis. Theoretical integration assembles these bones into a working skeleton". In other words, coding only generates important categories within the analysis while theoretical integration provides the analysis with the context of the categories and how they fit within the bigger picture or object of analysis.

Within the process of theoretical integration, the researcher takes a close look at the emerging theoretical codes and reflects back on what actually constructed these codes (what were the initial components) and what the initial context was wherein the codes emerged. Taking all this into account, the researcher then looks forward to the object of analysis (here social development project approach) and relates the theoretical codes to the object by determining first the consequences that the theoretical code has on the object of analysis and the accompanying hypotheses that take these consequences into a more general effect on social project development. Theoretical integration is a step within the coding process that often remains implicit in the analysis and is hard to define in terms of steps or decisions. It is more of a collection of thought components, reflection and

integration into a higher objective. Figure 4.1 provides a schematic overview of the thought process and the components of the research while conducting theoretical integration.

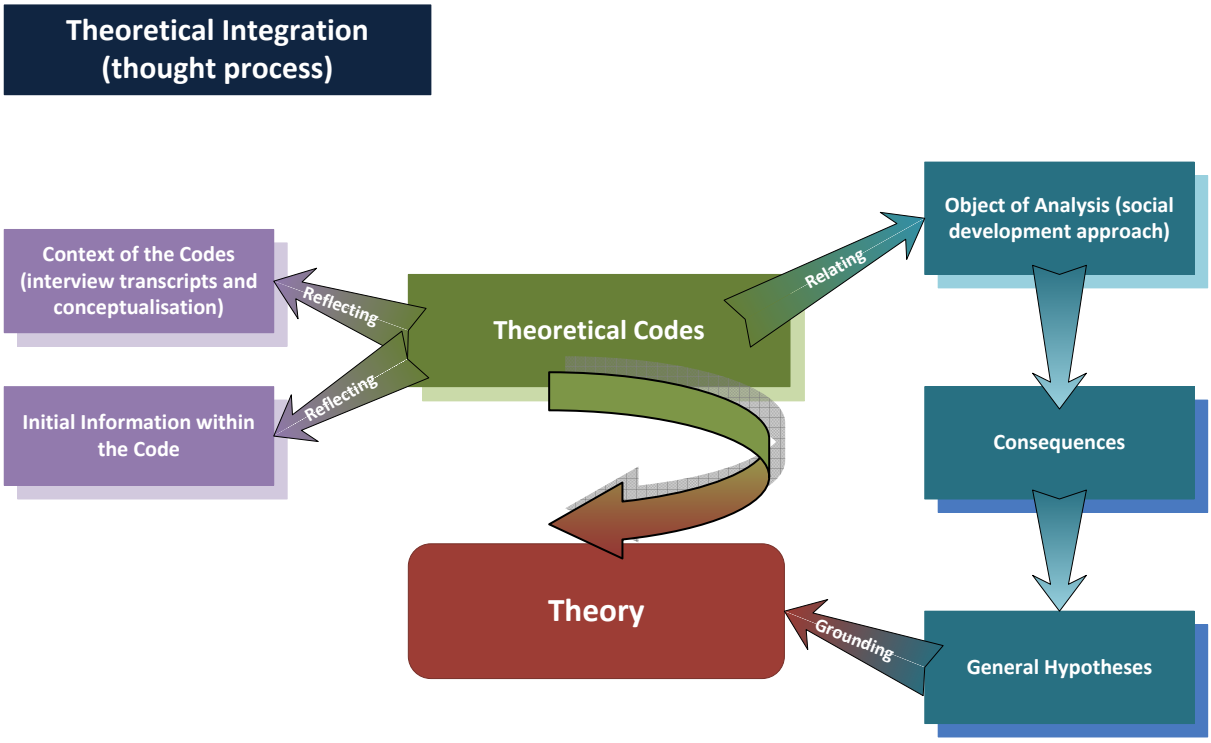

Figure 4.1: Theoretical integration process

Theoretical integration is a crucial step before a grounding theory emerges, since it is the hypotheses that feed into the grounded theory. The theoretical codes are presented within paragraph 1 along with an outline of the theoretical code and the accompanying hypothesis extracted through theoretical integration and describing its consequence on social project development. Paragraph two will depict the factor analysis that allows the researcher to assess the complexity of the situation and the coherence between these theoretical codes. Within this stage, the codes transform into factors that are part of the grounded theory. This theory is presented within paragraph three and functions as an assessment of the situation and a basis for conclusions and recommendations. Paragraph three will also provide the end-product of the research, the new policy framework that has been constructed taking into account all previous information in the form of core factors, causal relations, clusters and the grounded theory.

The remainder of this chapter (results) as well as chapter 5 (conclusions and recommendations) and chapter six (reflections) will not be part of this copy of the report due to confidentiality reasons. For questions on these specific elements of the research, please contact the author: Hanane Ouna.

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